

SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) RATING DO- PAGE 1 OF PAGES

2. CONTRACT NUMBER 3. SOLICITATION NUMBER HSCG23-07-R-AFR001 4. TYPE OF SOLICITATION SEALED BID (IFB) NEGOTIATED (RFP) 5. DATE ISSUED 22 Jun 2007 6. REQUISITION/PURCHASE NO. 2107237AFR001

7. ISSUED BY CODE Commandant (G-ACS-5/KB) U.S. Coast Guard Headquarters 2100 Second Street, SW Washington, DC 20593 8. ADDRESS OFFER TO (If other than Item 7)

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder"

SOLICITATION

9. Sealed offers in original and copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in _____ until _____ local time. SEE SECTION L FOR INSTRUCTIONS

CAUTION — LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL: A. NAME H. KATRINA BRISBON B. TELEPHONE (NO COLLECT CALLS) AREA CODE 202 NUMBER 475-3067 EXT. C. E-MAIL ADDRESS henrietta.k.brisbon@uscg.mil

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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s) within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT 10 CALENDAR DAYS % 20 CALENDAR DAYS % 30 CALENDAR DAYS % CALENDAR DAYS %

14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):

AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR CODE FACILITY 16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)

15B. TELEPHONE NUMBER AREA CODE NUMBER EXT. 15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE 17. SIGNATURE 18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED 20. AMOUNT 21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: 10 U.S.C. 2304(c) () 41 U.S.C. 253(c)() 23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) ITEM

24. ADMINISTERED BY (If other than Item 7) CODE 25. PAYMENT WILL BE MADE BY CODE

26. NAME OF CONTRACTING OFFICER (Type or print) 27. UNITED STATES OF AMERICA 28. AWARD DATE (Signature of Contracting Officer)

IMPORTANT -- Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

NOTICE FOR FILING AGENCY PROTESTS

It is the policy of the Coast Guard to issue solicitations and make contract awards in a fair and timely manner. The Ombudsman Program for Agency Protests (OPAP) was established to investigate agency protest issues and resolve them without expensive and time-consuming litigation. OPAP is an independent reviewing authority that is empowered to grant a prevailing protester essentially the same relief as the General Accounting Office (GAO).

Interested parties are encouraged to seek resolution of their concerns within the Coast Guard as an Alternative Dispute Resolution (ADR) forum, rather than filing a protest with the GAO or some external forum. Interested parties may seek resolution of their concerns **informally** or opt to file a **formal** agency protest with the contracting officer or Ombudsman.

Informal forum with the Ombudsman. Interested parties who believe that a Coast Guard procurement is unfair or otherwise defective should first direct their concerns to the cognizant contracting officer. If the contracting officer is unable to satisfy the concerns, the interested party is encouraged to contact the Coast Guard Ombudsman for Agency Protests. Under this informal process, the agency is not required to suspend contract award performance. Use of an informal forum does not suspend any time requirement for filing a protest with the agency or other forum. In order to ensure a timely response, interested parties should provide the following information to the Ombudsman: solicitation/contract number, contracting office, contracting officer, and solicitation closing date (if applicable).

Formal Agency Protest with the Ombudsman. Prior to submitting a formal agency protest, protesters must first use their best efforts to resolve their concerns with the contracting officer through open and frank discussions. If the protester's concerns are unresolved, an independent review is available by the Ombudsman. The protester may file a formal agency protest to either the contracting officer or as an alternative to that, the Ombudsman under the OPAP program. Contract award or performance will be suspended during the protest period unless contract award or performance is justified, in writing, for urgent and compelling reasons or is determined in writing to be in the best interest of the Government. The agency's goal is to resolve protests in less than 35 calendar days from the date of filing. Protests shall include the information set forth at FAR 33.103(d)(2). If the protester fails to submit the required information, resolution of the protest may be delayed or the protest may be dismissed. This will not preclude re-filing of the protest to meet the requirement. To be timely, protests must be filed within the period specified in FAR 33.103(e). **Formal** protests filed under the OPAP program should be forwarded to the address below:

Commandant (G-A)
U.S. Coast Guard Headquarters
Acquisition Planning and Performance Measurement
1900 Half St. SW, Room 11-0402
Washington, DC 20593
Telephone: (202) 372-3692
Fax: (202) 475-3904

Part I – The Schedule
Section B – Supplies or Services and Prices/Costs

B.1 [RFP] CONTRACT LINE ITEMS (CLINS)

B.1.1. [A011] The Government intention is to award CLINS 0001 through 0007 and associated Sub-CLINS in the base period for the design and construction of the lead cutter.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Total Extended Price
0001		Design of Fast Response Cutter (FRC-B) (FFP)		1 Each	\$ _____
0001	A	Design Data	NSP	1 Lot	
0002		System Safety Program (FFP)		1 Each	\$ _____
0003		Human Engineering Program (FFP)		1 Each	\$ _____
0004		Training Equipment Package (FFP)		1 Lot	\$ _____
0005		Training Development and Data (FFP)		1 Lot	\$ _____
0006		Model (FFP)		2 Each	\$ _____
0007		Construction of LEAD FRC-B including all deliverables IAW design developed under CLIN 0001			
0007	A	Construct FRC-B (FFP)		1 Each	\$ _____
0007	B	Warranty (FFP)		1 Year	\$ _____
0007	C	Data	NSP	1 Lot	
0007	D	Supply Support (CPFF)(completion)		1 Lot	Estimated Cost: \$1,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0007	E	Training (FFP)		1 Job	\$ _____
0007	F	Builder's Risk Insurance (FFP)		1 Lot	\$ _____

B.2 [A011] OPTIONAL CONTRACT LINE ITEMS

B.2.1. [A011] The total number of cutters obtained under this contract will be limited to thirty-three optional cutters.

B.2.2. [A011] For limitations and details on exercise of options under this contract, see the Section H clause entitled "[Exercise of Options.](#)"

B.3 [A013] OPTION PERIOD ONE

B.3.1. [A013] Option Period One begins 90 days after contract award and expires on September 30, 2009.

B.3.2. [A014] Insurance Spares: The Coast Guard reserves the right to order CLIN 0012 on a SUB-CLIN basis and to order each SUB-CLIN up to three times during this option period.

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0008	Low Rate Initial Production (LRIP) FRC-B			
0008	A Construct FRC-B (FP EPA)		3 Each	\$ _____
0008	B Warranty (FP EPA)		3 Years (1 Year/Boat)	\$ _____
0008	C Data	NSP	3 Lots (1 lot/boat)	\$ _____
0008	D Supply Support (CPFF)		3 Lots (1 lot/boat)	Estimated Cost: \$3,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0008	E Training (FP EPA)		3 Jobs	\$ _____
0008	F Builder's Risk Insurance (FFP)		3 Lot	\$ _____
0008	G Reserved for Economic Price Adjustment	TBD	Quarterly	\$ _____
0009	Reprocurement Data and License Package (FFP)		1 Lot	\$ _____
0010	Interim Contractor Supply Support (ICSS)(CPFF)		1 Lot	Estimated Cost: \$1,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0011	System Stock (CPFF)		1 Lot	Estimated Cost: \$5,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0012	Insurance Spares			
0012	A Propellers (bored, blue fit & keyed for fixed pitch propeller systems) OR Propeller Hubs with matched blade sets (for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0012	B Rudders (complete w/rudder posts and keys) (if fitted) (FP EPA)		1 Shipset	\$ _____
0012	C Water Jet Assemblies (if fitted) (FP EPA)		1 Shipset	\$ _____
0012	D Propulsion Shaft Struts (if fitted) (FP EPA)		1 Shipset	\$ _____
0012	E Propulsion Shaft Bearings (if fitted) (FP EPA)		1 Shipset	\$ _____
0012	F Propulsion Engines (FP EPA)		1 Shipset	\$ _____
0012	G Reduction Gears (FP EPA)		1 Shipset	\$ _____
0012	H Loiter Drives (if fitted) (FP EPA)		1 Shipset	\$ _____

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0012	I	S/S Generator Sets (FP EPA)	1 Shipset	\$ _____
0012	J	Emergency Generator Set (FP EPA)	1 Shipset	\$ _____
0012	K	Propulsion Shafts (solid w/key & nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems) (if fitted) (FP EPA)	1 Shipset	\$ _____
0012	L	Propulsion Couplings, all fitted with key (engine to gear, out flange to shaft, etc.) (FP EPA)	1 Shipset	\$ _____
0012	M	Cutter Boat (Complete w/Outfit & Trailer) (FP EPA)	1 EA	\$ _____

B.4 [A013] OPTION PERIOD TWO

B.4.1. [A013] Option Period Two begins on October 1, 2009 and expires September 30, 2010.

B.4.2. [A014] The Coast Guard has the option to either order four FRC-B (CLIN 0013) or six FRC-B (CLIN 0014) during this option period, with the associated sub-CLINs, but not both CLIN 0013 and 0014.

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0013	Four Fast Response Cutters			
0013	A	Construct FRC-B (FP EPA)	4 each	\$ _____
0013	B	Warranty (FP EPA)	4 Years (1 Year/Boat)	\$ _____
0013	C	Data	NSP 4 Lots (1 Lot/Boat)	
0013	D	Supply Support (CPFF)	4 Lots (1 Lot/Boat)	Estimated Cost: \$4,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0013	E	Training (FP EPA)	4 Jobs	\$ _____
0013	F	Builder's Risk Insurance (FFP)	4 Lots (1 Lot/Boat)	\$ _____
0013	G	Reserved for Economic Price Adjustment	TBD Quarterly	TBD

OR

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0014	Six Fast Response Cutters			

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0014	A	Construct FRC-B (FP EPA)		6 each	\$ _____
0014	B	Warranty (FP EPA)		6 Years (1 Year/Boat)	\$ _____
0014	C	Data	NSP	6 Lots (1 Lot/Boat)	
0014	D	Supply Support (CPFF)		6 Lots (1 Lot/Boat)	Estimated Cost: \$6,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0014	E	Training (FP EPA)		6 Jobs	\$ _____
0014	F	Builder's Risk Insurance (FFP)		6 Lots (1 Lot/Boat)	\$ _____
0014	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

B.4.3. [A013] Reprocurement Data and License Package (RDLP) and Insurance Spares.

B.4.3.1. [A013] A CLIN for the RDLP is listed in each option period. However, the option for the RDLP may be exercised only once during the total contract period of performance (base plus option periods).

B.4.3.2. [A014] The Coast Guard reserves the right to order CLIN 0016 on a SUB-CLIN basis and to order each SUB-CLIN up to three times during this option period.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0015		Reprocurement Data and License Package (FFP)		1 Lot	\$ _____
0016		Insurance Spares			
0016	A	Propellers (bored, blue fit & keyed for fixed pitch propeller systems) OR Propeller Hubs with matched blade sets (for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	B	Rudders (complete w/rudder posts and keys) (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	C	Water Jet Assemblies (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	D	Propulsion Shaft Struts (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	E	Propulsion Shaft Bearings (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	F	Propulsion Engines (FP EPA)		1 Shipset	\$ _____
0016	G	Reduction Gears (FP EPA)		1 Shipset	\$ _____
0016	H	Loiter Drives (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	I	S/S Generator Sets (FP EPA)		1 Shipset	\$ _____

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0016	J	Emergency Generator Set (FP EPA)		1 Shipset	\$ _____
0016	K	Propulsion Shafts (solid w/key & nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0016	L	Propulsion Couplings, all fitted with key (engine to gear, out flange to shaft, etc.) (FP EPA)		1 Shipset	\$ _____
0016	M	Cutter Boat (Complete w/Outfit & Trailer) (FP EPA)		1 EA	\$ _____

B.5 [A013] OPTION PERIOD THREE

B.5.1. [A013] Option Period Three begins on October 1, 2010 and expires September 30, 2011.

B.5.2. [A014] The Coast Guard has the option to either order four FRC-B (CLIN 0017) or six FRC-B (CLIN 0018) during this option period, with the associated sub-CLINs, but not both CLIN 0017 and 0018.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0017		Four Fast Response Cutters			
0017	A	Construct FRC-B (FP EPA)		4 each	\$ _____
0017	B	Warranty (FP EPA)		4 Years (1 Year/Boat)	\$ _____
0017	C	Data	NSP	4 Lots (1 Lot/Boat)	
0017	D	Supply Support (CPFF)		4 Lots (1 Lot/Boat)	Estimated Cost: \$4,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0017	E	Training (FP EPA)		4 Jobs	\$ _____
0017	F	Builder's Risk Insurance (FFP)		4 Lots (1 Lot/Boat)	\$ _____
0017	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

OR

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0018		Six Fast Response Cutters			
0018	A	Construct FRC-B (FP EPA)		6 each	\$ _____
0018	B	Warranty (FP EPA)		6 Years (1 Year/Boat)	\$ _____

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0018	C	Data	NSP	6 Lots (1 Lot/Boat)	
0018	D	Supply Support (CPFF)		6 Lots (1 Lot/Boat)	Estimated Cost: \$6,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0018	E	Training (FP EPA)		6 Jobs	\$ _____
0018	F	Builder's Risk Insurance (FFP)		6 Lots (1 Lot/Boat)	\$ _____
0018	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

B.5.3. [A013] Reprocurement Data and License Package (RDLP) and Insurance Spares.

B.5.3.1. [A013] A CLIN for the RDLP is listed in each option period. However, the option for the RDLP may be exercised only once during the total contract period of performance (base plus option periods).

B.5.3.2. [A014] Insurance Spares: The Coast Guard reserves the right to order CLIN 0020 on a SUB-CLIN basis and to order each SUB-CLIN up to three times during this option period.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0019		Reprocurement Data and License Package (FFP)		1 Lot	\$ _____
0020		Insurance Spares			
0020	A	Propellers (bored, blue fit & keyed for fixed pitch propeller systems) OR Propeller Hubs with matched blade sets (for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	B	Rudders (complete w/rudder posts and keys) (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	C	Water Jet Assemblies (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	D	Propulsion Shaft Struts (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	E	Propulsion Shaft Bearings (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	F	Propulsion Engines (FP EPA)		1 Shipset	\$ _____
0020	G	Reduction Gears (FP EPA)		1 Shipset	\$ _____
0020	H	Loiter Drives (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	I	S/S Generator Sets (FP EPA)		1 Shipset	\$ _____
0020	J	Emergency Generator Set (FP EPA)		1 Shipset	\$ _____

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0020	K	Propulsion Shafts (solid w/key & nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0020	L	Propulsion Couplings, all fitted with key (engine to gear, out flange to shaft, etc.) (FP EPA)		1 Shipset	\$ _____
0020	M	Cutter Boat (Complete w/Outfit & Trailer) (FP EPA)		1 Shipset	\$ _____

B.6 [A013] OPTION PERIOD FOUR

B.6.1. [A013] Option Period Four begins on October 1, 2011 and expires September 30, 2012.

B.6.2. [A014] The Coast Guard has the option to either order four FRC-B (CLIN 0021) or six FRC-B (CLIN 0022) during this option period, with the associated sub-CLINs, but not both CLIN 0021 and 0022.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0021		Four Fast Response Cutters			
0021	A	Construct FRC-B (FP EPA)		4 each	\$ _____
0021	B	Warranty (FP EPA)		4 Years (1 Year/Boat)	\$ _____
0021	C	Data	NSP	4 Lots (1 Lot/Boat)	
0021	D	Supply Support (CPFF)		4 Lots (1 Lot/Boat)	Estimated Cost: \$4,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0021	E	Training (FP EPA)		4 Jobs	\$ _____
0021	F	Builder's Risk Insurance (FFP)		4 Lots (1 Lot/Boat)	\$ _____
0021	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

OR

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0022		Six Fast Response Cutters			
0022	A	Construct FRC-B (FP EPA)		6 each	\$ _____
0022	B	Warranty (FP EPA)		6 Years (1 Year/Boat)	\$ _____
0022	C	Data	NSP	6 Lots (1 Lot/Boat)	

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0022	D	Supply Support (CPFF)		6 Lots (1 Lot/Boat)	Estimated Cost: \$6,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0022	E	Training (FP EPA)		6 Jobs	\$ _____
0022	F	Builder's Risk Insurance (FFP)		6 Lots (1 Lot/Boat)	\$ _____
0022	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

B.6.3. [A013] Reprocurement Data and License Package (RDLP) and Insurance Spares

B.6.3.1. [A013] A CLIN for the RDLP is listed in each option period. However, the option for the RDLP may be exercised only once during the total contract period of performance (base plus option periods).

B.6.3.2. [A014] Insurance Spares: The Coast Guard reserves the right to order CLIN 0024 on a SUB-CLIN basis and to order each SUB-CLIN up to three times during this option period.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0023		Reprocurement Data and License Package (FFP)		1 Lot	\$ _____
0024		Insurance Spares			
0024	A	Propellers (bored, blue fit & keyed for fixed pitch propeller systems) OR Propeller Hubs with matched blade sets (for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0024	B	Rudders (complete w/rudder posts and keys) (if fitted) (FP EPA)		1 Shipset	\$ _____
0024	C	Water Jet Assemblies (if fitted) (FP EPA)		1 Shipset	\$ _____
0024	D	Propulsion Shaft Struts (if fitted) (FP EPA)		1 Shipset	\$ _____
0024	E	Propulsion Shaft Bearings (if fitted) (FP EPA)		1 Shipset	\$ _____
0024	F	Propulsion Engines (FP EPA)		1 Shipset	\$ _____
0024	G	Reduction Gears (FP EPA)		1 Shipset	\$ _____
0024	H	Loiter Drives (if fitted) (FP EPA)		1 Shipset	\$ _____
0024	I	S/S Generator Sets (FP EPA)		1 Shipset	\$ _____
0024	J	Emergency Generator Set (FP EPA)		1 Shipset	\$ _____

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0024	K	Propulsion Shafts (solid w/key & nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems) (if fitted) (FP EPA)	1 Shipset	\$ _____
0024	L	Propulsion Couplings, all fitted with key (engine to gear, out flange to shaft, etc.) (FP EPA)	1 Shipset	\$ _____
0024	M	Cutter Boat (Complete w/Outfit & Trailer) (FP EPA)	1 EA	\$ _____

B.7 [A013] OPTION PERIOD FIVE

B.7.1. [A013] Option Period Five begins on October 1, 2012 and expires September 30, 2013.

B.7.2. [A014] The Coast Guard has the option to either order four FRC-B (CLIN 0025) or six FRC-B (CLIN 0026) during this option period, with the associated sub-CLINs, but not both CLIN 0025 and 0026.

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0025		Four Fast Response Cutters		
0025	A	Construct FRC-B (FP EPA)	4 each	\$ _____
0025	B	Warranty (FP EPA)	4 Years (1 Year/Boat)	\$ _____
0025	C	Data	4 Lots (1 Lot/Boat)	NSP
0025	D	Supply Support (CPFF)	4 Lots (1 Lot/Boat)	Estimated Cost: \$4,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0025	E	Training (FP EPA)	4 Jobs	\$ _____
0025	F	Builder's Risk Insurance (FFP)	4 Lots (1 Lot/Boat)	\$ _____
0025	G	Reserved for Economic Price Adjustment	Quarterly	TBD

OR

CLIN	Description of Supplies/Services	Unit Price	Quantity	Extended Price
0026		Six Fast Response Cutters		
0026	A	Construct FRC-B (FP EPA)	6 each	\$ _____
0026	B	Warranty (FP EPA)	6 Years (1 Year/Boat)	\$ _____
0026	C	Data	6 Lots (1 Lot/Boat)	NSP

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0026	D	Supply Support (CPFF)		6 Lots (1 Lot/Boat)	Estimated Cost: \$6,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0026	E	Training (FP EPA)		6 Jobs	\$ _____
0026	F	Builder's Risk Insurance (FFP)		6 Lots (1 Lot/Boat)	\$ _____
0026	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

B.7.3. [A013] Reprourement Data and License Package (RDLP) and Insurance Spares.

B.7.3.1. [A013] A CLIN for the RDLP is listed in each option period. However, the option for the RDLP may be exercised only once during the total contract period of performance (base plus option periods).

B.7.3.2. [A014] The Coast Guard reserves the right to order CLIN 0016 on a SUB-CLIN basis and to order each SUB-CLIN up to three times during this option period.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0027		Reprocurement Data and License Package (FFP)		1 Lot	\$ _____
0028		Insurance Spares			
0028	A	Propellers (bored, blue fit & keyed for fixed pitch propeller systems) OR Propeller Hubs with matched blade sets (for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	B	Rudders (complete w/rudder posts and keys) (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	C	Water Jet Assemblies (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	D	Propulsion Shaft Struts (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	E	Propulsion Shaft Bearings (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	F	Propulsion Engines (FP EPA)		1 Shipset	\$ _____
0028	G	Reduction Gears (FP EPA)		1 Shipset	\$ _____
0028	H	Loiter Drives (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	I	S/S Generator Sets (FP EPA)		1 Shipset	\$ _____
0028	J	Emergency Generator Set (FP EPA)		1 Shipset	\$ _____

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0028	K	Propulsion Shafts (solid w/key & nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0028	L	Propulsion Couplings, all fitted with key (engine to gear, out flange to shaft, etc.) (FP EPA)		1 Shipset	\$ _____
0028	M	Cutter Boat (Complete w/Outfit & Trailer) (FP EPA)		1 EA	\$ _____

B.8 [A013] OPTION PERIOD SIX

B.8.1. [A013] Option Period Six begins on October 1, 2013 and expires September 30, 2014.

B.8.2. [A014] The Coast Guard has the option to either order four FRC-B (CLIN 0029) or six FRC-B (CLIN 0030) during this option period, with the associated sub-CLINs, but not both CLIN 0029 and 0030.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0029		Four Fast Response Cutters			
0029	A	Construct FRC-B (FP EPA)		4 each	\$ _____
0029	B	Warranty (FP EPA)		4 Years (1 Year/Boat)	\$ _____
0029	C	Data	NSP	4 Lots (1 Lot/Boat)	
0029	D	Supply Support (CPFF)		4 Lots (1 Lot/Boat)	Estimated Cost: \$4,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0029	E	Training (FP EPA)		4 Jobs	\$ _____
0029	F	Builder's Risk Insurance (FFP)		4 Lots (1 Lot/Boat)	\$ _____
0029	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

OR

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0030		Six Fast Response Cutters			
0030	A	Construct FRC-B (FP EPA)		6 each	\$ _____
0030	B	Warranty (FP EPA)		6 Years (1 Year/Boat)	\$ _____

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0030	C	Data	NSP	6 Lots (1 Lot/Boat)	
0030	D	Supply Support (CPFF)		6 Lots (1 Lot/Boat)	Estimated Cost: \$6,000,000.00 Fixed Fee: \$ _____ Total Cost: \$ _____
0030	E	Training (FP EPA)		6 Jobs	\$ _____
0030	F	Builder's Risk Insurance (FFP)		6 Lots (1 Lot/Boat)	\$ _____
0030	G	Reserved for Economic Price Adjustment	TBD	Quarterly	TBD

B.8.3. [A013] Reprocurement Data and License Package (RDLP) and Insurance Spares.

B.8.3.1. [A013] A CLIN for the RDLP is listed in each option period. However, the option for the RDLP may be exercised only once during the total contract period of performance (base plus option periods).

B.8.3.2. [A014] The Coast Guard reserves the right to order CLIN 0016 on a SUB-CLIN basis and to order each SUB-CLIN up to three times during this option period.

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0031		Reprocurement Data and License Package (FFP)		1 Lot	\$ _____
0032		Insurance Spares			
0032	A	Propellers (bored, blue fit & keyed for fixed pitch propeller systems) OR Propeller Hubs with matched blade sets (for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	B	Rudders (complete w/rudder posts and keys) (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	C	Water Jet Assemblies (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	D	Propulsion Shaft Struts (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	E	Propulsion Shaft Bearings (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	F	Propulsion Engines (FP EPA)		1 Shipset	\$ _____
0032	G	Reduction Gears (FP EPA)		1 Shipset	\$ _____
0032	H	Loiter Drives (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	I	S/S Generator Sets (FP EPA)		1 Shipset	\$ _____
0032	J	Emergency Generator Set (FP EPA)		1 Shipset	\$ _____

CLIN		Description of Supplies/Services	Unit Price	Quantity	Extended Price
0032	K	Propulsion Shafts (solid w/key & nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems) (if fitted) (FP EPA)		1 Shipset	\$ _____
0032	L	Propulsion Couplings, all fitted with key (engine to gear, out flange to shaft, etc.) (FP EPA)		1 Shipset	\$ _____
0032	M	Cutter Boat (Complete w/Outfit & Trailer) (FP EPA)		1 EA	\$ _____

Part I – The Schedule
Section C – Description/Specifications/Work Statement

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C.1 [RFP] GENERAL SCOPE OF WORK

- C.1.1.** [RFP] The Contractor shall develop the design of, construct, and deliver Fast Response Cutters – B-Class (FRC-Bs) in accordance with the provisions of this Contract.
- C.1.2.** [RFP] The Contractor shall provide the management effort necessary to ensure the on-schedule completion of all design and construction efforts, including the preparation of all reports required by the Contract Data Requirements List (CDRL), DD Form 1423.
- C.1.3.** [RFP] The Contractor shall furnish any and all equipment, materials, and labor required for the performance of this contract, except that equipment identified as Government Furnished Equipment (GFE). The Contractor shall be responsible for providing adequate storage facilities for the stowage and handling of all GFE as it is received, and for the installation of GFE as appropriate. GFE and Government Furnished Information (GFI) are listed in Section J, [Attachment 7](#) and Section J, [Attachment 6](#) respectively.

C.2 [RFP] GENERAL ADMINISTRATIVE REQUIREMENTS

- C.2.1.** [RFP] Schedules. The schedules required in COR Section [042](#) shall be prepared and submitted to the Contracting Officer:
- C.2.2.** [RFP] Meetings. The contractor shall host meetings as required throughout the contract, and ensure they are reflected in the Integrated Master Plan (IMP) and Integrated Master Schedule (IMS). Notice, agendas, and minutes for all meetings hosted shall comply with COR Section [042](#).
- C.2.3.** [RFP] Integrated Product Data Environment (IPDE). The contractor shall provide and maintain an Integrated Product Data Environment (IPDE) in accordance with COR Section [042](#) to support the exchange and archiving of contract data.

C.3 [RFP] DESIGN OF FAST RESPONSE CUTTER (FRC) (CLIN 0001)

- C.3.1.** [RFP] The Contractor shall provide all efforts necessary for the development of a complete, accurate technical description of the FRC-B. The Contractor shall, as necessary, based on the COR, prepare specifications, drawings and other technical data to define the cutter in sufficient detail to permit construction. This effort shall produce a design with descriptive documentation adequate for use in cutter construction and for operation, maintenance and repair. The Contractor shall perform the integration and design effort to ensure that a consistent, compatible, and technically sound design has been developed. The Contractor is responsible for the accuracy and adequacy of the design.
- C.3.2.** [RFP] The FRC-B design shall be based on an in-service parent craft meeting the following definition:
- C.3.2.1.** [A005] In-Service: The Parent Craft shall have been previously designed, built, and operated as a patrol craft in unrestricted service. Craft originally designed

and built for other service, which have been successfully modified for patrol service, and have operated successfully in patrol service, are acceptable. Craft designed and built for other than patrol service, but as yet unproven in patrol service are not acceptable. Patrol service shall mean (1) the craft incorporates armament, electronics, and communications equipment and (2) that the craft has operated in search and rescue, enforcement of laws and treaties, and/or military service. A minimum of two such craft shall have been designed and built and one of these craft shall be designated the Parent Craft. The Parent Craft shall have operated in offshore patrol service for a minimum of two years. However, if only a single such craft proposed as a Parent Craft exists; it shall have operated in offshore patrol service for a minimum of six years.

C.3.3. [RFP] The following shall be identical to the Parent Craft:

- C.3.3.1.** [RFP] Hull form and dimensions (defined as the underwater body and hull up to the sheer line of the Parent Craft);
- C.3.3.2.** [RFP] Underwater appendages type and configuration (i.e. number of rudders, struts, skegs, fin stabilizers, shaft line, etc.(as fitted));
- C.3.3.3.** [A010] Type of propulsion (i.e. Diesel driven, Propeller, Marine Water Jet, etc.).
- C.3.3.4.** [RFP] Arrangement and configuration of the propulsion system (i.e. two engine, three engine, shaft angle, etc.).

C.3.4. [RFP] The following modifications to the Parent Craft are permitted (providing they do not adversely affect performance):

- C.3.4.1.** [RFP] Structural changes to meet the vessel classification requirements in COR Section [070](#) which do not vary the hull form and dimensions;
- C.3.4.2.** [RFP] Structural changes to accommodate substitutions in the propulsion system (i.e. substituting a newer engine model or an engine which better meets the powering requirements for the FRC-B to meet the required performance or an auxiliary loiter drive to optimize slow speed performance) which do not vary the hull form and dimensions;
- C.3.4.3.** [RFP] Structural changes and changes to the transom which do not change the overall Parent Craft hull form and dimensions to meet the Cutter Boat launch and recovery system requirements in COR Section [583](#);
- C.3.4.4.** [RFP] Modification of rudder location(s) in order to meet the Cutter Boat launch and recovery system requirements in COR Section [583](#) that do not adversely affect the overall performance of the Parent Craft;
- C.3.4.5.** [RFP] Modification of tankage to meet endurance requirements in COR Section [070](#);
- C.3.4.6.** [RFP] An equivalent or higher strength hull material, as allowed in COR Section [100-1](#);
- C.3.4.7.** [RFP] Modification of watertight bulkhead location(s).

- C.3.4.8.** [A010] Modifications to propeller shaft diameter and associated support bearing sizes.
- C.3.4.9.** [A010] Changes to propeller (diameter or pitch), and type (fixed pitch or controllable pitch).
- C.3.4.10.** [A014] Changes to the transverse location of water jets to accommodate the Cutter Boat launch and recovery system.
- C.3.5.** [RFP] The Contractor shall investigate available technology and consider alternative systems for meeting the Cutter Boat launch and recovery requirements, heavy weather berthing/sanitary/commissary requirements, and propulsion system selection requirements.
- C.3.6.** [A010] The FRC-B full load displacement shall not vary by more than 10% from the Parent Craft full load displacement at delivery. The FRC-B longitudinal center of gravity (LCG) at full load displacement shall not vary by more than 1% of the length on the waterline from the Parent Craft LCG at full load at delivery.

C.4 [RFP] SYSTEM SAFETY PROGRAM (CLIN 0002)

- C.4.1.** [RFP] A System Safety Program shall be implemented during the design and construction of the lead FRC-B cutter in accordance with COR Section [077](#).

C.5 [RFP] HUMAN FACTORS ENGINEERING PROGRAM (CLIN 0003)

- C.5.1.** [RFP] A Human Factors Engineering Program will be implemented during the design and construction of the lead cutter in accordance with COR Section [088](#). Unless otherwise specified, mock-ups required by the Human Factors Engineering Program shall be maintained for frequent reference until acceptance of the lead cutter.

C.6 [RFP] TRAINING EQUIPMENT PACKAGE (CLIN 0004)

- C.6.1.** [RFP] The Contractor shall obtain one lot of training equipment identical to the equipment installed aboard the lead cutter. The training equipment shall be delivered in accordance with Contract [Section F](#). The Training Equipment Package shall consist of:

ITEM	UNIT	QUANTITY
(1) Propulsion Engine	1	EACH
(2) Reduction Gear	1	EACH
(3) Engine control/console interface	1	EACH
(4) Pilothouse Console	1	EACH
(5) C4ISR Suite (including all C2, Navigation, Communication, and interfaced equipment)	1	EACH

C.7 [RFP] TRAINING DEVELOPMENT AND DATA (CLIN 0005)

- C.7.1.** [RFP] The Contractor shall develop training as required by COR Section [089](#).
- C.7.2.** [RFP] The Contractor shall prepare and deliver data in support of CLIN 0005 in accordance with COR Section [089](#).

C.8 [RFP] MODEL (CLIN 0006)

- C.8.1.** [RFP] The Contractor shall deliver scale models of the FRC-B in accordance with COR Section [098-1](#).

C.9 [RFP] CONSTRUCTION OF FRC-B (LEAD HULL) (CLIN 0007)

- C.9.1.** [RFP] The Contractor shall provide all efforts necessary for the construction of an FRC-B using the design produced under CLIN 0001 of this contract. The Contractor shall satisfy all requirements of the COR.
- C.9.2.** [RFP] The Contractor shall be responsible for ensuring that each cutter delivered to the Government complies with all applicable laws of the United States and with the regulations of governing regulatory bodies.
- C.9.3.** [RFP] The Contractor shall conduct required testing and trials in accordance with COR Section [094](#).
- C.9.4.** [RFP] The contractor shall prepare and deliver photographs, negatives, slides, and electronic files (.jpg) of the construction process in accordance with [CDRL 000-001](#). Identification data shall be added in such a manner that it will not impair the pictorial qualities of the photograph.
- C.9.5.** [RFP] Following successful Preliminary Acceptance Trials, the FRC-B shall be delivered to the location specified in Contract Section F. The Contractor shall provide all equipment and personnel, required for delivery; the operator of the FRC-B must hold a Coast Guard license, appropriate for the displacement of the FRC-B, as a Master, for the appropriate route; or a superior license as defined in [46 CFR-Figure 10.403](#). All required personal safety equipment and all contractor personnel shall have the requisite Coast Guard licenses and documents to operate the FRC-B. The contractor shall obtain liability insurance to cover the cutter while operated under the control of contractor personnel. The Contractor shall demonstrate to the Contracting Officer's satisfaction, evidence of such insurance prior to the FRC-B's departure. The Contractor shall be responsible for any equipment damaged during shipment or outfit consumed.
- C.9.6.** [RFP] The Contractor shall provide a PRO and a PCAF facility in accordance with COR Sections [087-3](#) and [087-4](#).

C.10 [A011] LOW RATE INITIAL PRODUCTION (LRIP) FAST RESPONSE CUTTERS (CLIN 0008)

- C.10.1.** [RFP] If exercised, the Contractor shall provide all efforts necessary for the Construction of optional FRC-B(s) using the design developed under CLINs 0001

and 0007. Lead cutter construction and deliverable requirements contained in Contract Section C.9 are applicable to each optional cutter. However, delivery for all optional cutters is FOB Origin (see Contract Section F.3).

C.10.2. [RFP] Post Delivery Period (PDP): Immediately following delivery and preliminary acceptance, each LRIP FRC-B shall commence a PDP of not more than 30 calendar days at the Contractor's facility. During the PDP, the Contractor shall provide:

C.10.2.1. [RFP] berthing space pier side for the FRC-B, including a brow and landing platform, as appropriate, with utilities from shore connections (electricity, potable water, two private telephone lines, connection to PRO LAN, firemain pressure and sewage disposal) and daily garbage removal;

C.10.2.2. [RFP] access through the yard to the FRC-B for authorized Government personnel, cutter's force, vendors and authorized visitors.

**C.11 [A011] FULL PRODUCTION FAST RESPONSE CUTTERS
(CLINS 0013A, 0014A, 0017A, 0018A, 0021A, 0022A, 0025A, 0026A, 0029A, 0030A)**

C.11.1. [RFP] If exercised, the Contractor shall provide all efforts necessary for the construction of FRC-B(s) using the design developed under CLINs 0001 and 0007. Lead cutter and low-rate initial production cutter(s) (LRIP) construction and deliverable requirements contained in Contract Sections C.9 and C.10 are applicable to each optional cutter.

C.11.2. [RFP] Post Delivery Period (PDP): Immediately following delivery and preliminary acceptance, each Full Production FRC-B shall commence a PDP of not more than 30 calendar days at the Contractor's facility. During the PDP, the Contractor shall provide:

C.11.2.1. [RFP] berthing space pier side for the FRC-B, including a brow and landing platform, as appropriate, with utilities from shore connections (electricity, potable water, two private telephone lines, connection to PRO LAN, firemain pressure and sewage disposal) and daily garbage removal;

C.11.2.2. [RFP] access through the yard to the FRC-B for authorized Government personnel, cutter's force, vendors and authorized visitors.

**C.12 [A011] WARRANTY
(CLINS 0007B, 0008B, 0013B, 0014B, 0017B, 0018B, 0021B, 0022B, 0025B, 0026B, 0029B, 0030B)**

C.12.1. [RFP] The Contractor shall provide a Warranty Program in accordance with the Section H clause entitled "[Warranty](#)" and the Section I clause entitled "[Warranty of Systems and Equipment under Performance Specifications or Design Criteria \(FAR 52.246-19\)](#)".

C.12.2. [RFP] The Contractor shall establish and maintain a warranty item correction program applicable to each optional cutter to ensure that all Contractor responsible warranty defects are corrected in an expeditious manner.

C.13 [A011] DATA**(CLINS 0007C, 0008C, 0013C, 0014C, 0017C, 0018C, 0021C, 0022C, 0025C, 0026C, 0029C, 0030C)**

- C.13.1.** [A011] The Contractor shall prepare and deliver data in support of CLINs 0007 and Option CLINs (if exercised) 0008, 0013, 0014, 0017, 0018, 0021, 0022, 0025, 0026, 0029, 0030 in accordance with COR Section 042 and Contract Section J, Attachment 3, Contract Data Requirements List (CDRL).

C.14 [A011] SUPPLY SUPPORT (CLINS 0007D, 0008D, 0013D, 0014D, 0017D, 0018D, 0021D, 0022D, 0025D, 0026D, 0029D, 0030D)

- C.14.1.** [RFP] The Contractor shall provide supply support in accordance with COR Section 083 as a function of initial outfitting of the cutter. Under the requirements of this section, the Contractor shall provide all of the material(s) in order to outfit each cutter prior to delivery in accordance with the requirements of the COR.

- C.14.2.** [RFP] The Contractor shall provide all the material (purchased parts – Operating Material and Spares (OM&S) , Operating Space Items, (OSI) Storeroom Items (SRI), General Use Consumable List Items (GUCL) and support and test equipment for the Coast Guard) approved for purchase by the Coast Guard under the provisions of COR Section 083 entitled "Outfitting Material Procurement" and the storage cabinets required by COR Section 083 entitled "Modular, High Density Equipment Storage Cabinets."

C.15 [A011] TRAINING (CLINS, 0007E, 0008E, 0013E, 0014E, 0017E, 0018E, 0021E, 0022E, 0025E, 0026E, 0029E, 0030E)

- C.15.1.** [RFP] If exercised, the Contractor shall update the training developed for CLIN 0005 on a continuous basis for all subsequent CLINs. Training shall be provided in accordance with Contract Section C.7 and COR Section 089. COR Section 089 describes the requirements for developing staffing levels and training support. It identifies specific information and material requirements to be furnished by the Contractor for accomplishment of personnel and training requirements. This section also applies to training requirements for shore support personnel who will support the FRC-B once delivered.

C.16 [A014] REPROCUREMENT DATA AND LICENSE PACKAGE (CLIN 0009)

- C.16.1.** [A014] For the purposes of this clause, the following definitions apply:
Reprocurement Data means recorded information, regardless of form or media, to include technical data and computer software (to include but not limited to any codes and algorithms necessary for design or production) which directly or indirectly supports and/or is produced or specifically used in the design and construction of the FRC-B. License is defined as agreement between the Contractor and the Government wherein the Contractor grants the Government the right to use the aforementioned data in accordance with the terms of the agreement.
Reprocurement Data and License Package is defined as the deliverable, if exercised, under this clause which shall include both Reprocurement Data and licensing.

C.16.2. [A014] The Government anticipates the procurement of 58 cutters in the FRC-B class of boats, 24-34 ordered under this contract with the remaining boats to be competitively acquired utilizing the Reprocurement Data Licensing Package (RDLP). If exercised, the Contractor shall provide a RDLP which details all necessary data and grants all necessary licenses from all required sources or entities, for the government to competitively acquire and/or manufacture a cutter that substantially duplicates the physical and performance characteristics of the Fast Response Cutter. The RDLP shall be of sufficient scope and detail to allow the Government to obtain additional FRC-Bs without any additional engineering design effort by, recourse to, and/or financial obligation to the Contractor and/or any subcontractor. The RDLP shall accurately reflect the level of design maturity that the FRC-B has attained on the exercise date of this optional CLIN. The principal types of data within the package shall include, but is not limited to, engineering drawings, standards, specifications, purchase descriptions, purchasing data, functional data, item requirement sheets, commercial catalogs, item identifications qualified products lists, approved vendors lists, qualitative procurement histories, deviations, waivers, and exceptions to requirements and various other documents that provide data on interchangeability and substitutability. The RDLP shall provide data necessary to accomplish and affect the design, engineering, performance, and quality sufficient to ensure functional and physical adequacy. This includes technical data which define the detail design, material composition, treatment, finish, chemical, physical and electrical properties, fabrication and production instructions, and other requirements necessary to ensure proper performance and manufacture. In accordance with [FAR 52.227-16](#), Additional Data Requirements, the Government may order, at a reasonable price to be negotiated by the parties, any of the aforementioned data that was used by the Contractor in executing any change to the FRC-B after the execution of this RDLP CLIN.

C.16.3. [A014] License:

C.16.3.1. [A014] The Contractor shall grant the Government an irrevocable, non-exclusive, nontransferable, and paid-up license to use, reproduce, and disclose to others all or any portion of the RDLP for the purposes of: (a) constructing or soliciting for the construction in the United States of Fast Response Cutters – B Class and Variants; (b) on a world-wide basis, repairing, maintaining, or operating; contracting for the repair, maintenance, or operation of; and soliciting offers for contracts or job orders to repair, maintain, or operate Fast Response Cutters – B Class and Variants, as well as systems, subsystems, components, assemblies, subassemblies, and spare and replacement parts, and variants thereof, needed to repair, maintain, operate, and support Fast Response Cutters – B Class and Variants; and (c) constructing or soliciting for the construction in the United States of vessels incorporating the systems, subsystems, components, assemblies, subassemblies, or spare or replacement parts of the Fast Response Cutters – B Class and Variants. The foregoing license applies only to purchases by the Government for use by the Government with funds appropriated by the Government and does not include sales or purchases under the Government's foreign military sales or similar foreign assistance programs. Nothing in this license shall prevent the Government from selling or otherwise disposing of any cutter which was originally constructed within the scope of this license.

C.16.3.2. [A014] The Contractor shall also grant the Government a world-wide, irrevocable, non-exclusive, nontransferable, and paid-up license to make, use,

and sell all inventions which the Contractor owns, which the Contractor has the right to sell, and which are disclosed in the RDLP.

C.16.3.3. [A014] The Government or others designated by the Government may make changes to the Reprourement Data in order that the items constructed using the Reprourement Data will meet the requirements of the Government.

C.16.4. [A014] Reprourement Data:

C.16.4.1. [A014] Reprourement Data shall be prepared and submitted in accordance with Engineering Drawing Practices ([ASME Y14.100](#), [ASME Y14.41](#), [ASME Y14.35M](#), and [ASME Y14.34M](#)) and the applicable documents cited in section 2 of [MIL-DTL-31000C](#).

C.16.4.2. [A014] The Technical Data Package (TDP) for Reprourement Data shall consist of the following:

C.16.4.2.1. [A014] Product drawings and associated lists. ([CDRL TDP-001](#))

C.16.4.2.2. [A014] Special inspection equipment drawings and associated lists, operating instructions, descriptive documentation, and calibration procedures. ([CDRL TDP-002](#))

C.16.4.2.3. [A014] Special tooling drawings and associated lists. ([CDRL TDP-003](#))

C.16.4.2.4. [A014] Specifications. ([CDRL TDP-004](#))

C.16.4.2.5. [A014] Software and software documentation. ([CDRL TDP-005](#))

C.16.4.2.6. [A014] Test requirements documents. ([CDRL TDP-006](#))

C.16.4.3. [A014] The Government or others designated by the Government shall be given unrestricted access to the Contractor's construction facilities and technical records in order to independently verify and validate the Reprourement Data.

C.16.4.4. [A014] All mandatory and optional Quality Assurance Provisions and Packaging requirements set forth in ([MIL-DTL-31000C](#)) shall be in effect.

C.16.5. [A014] Specifications and Drawings.

C.16.5.1. [A014] The Specifications shall be based upon the COR and shall fully describe the cutter and the requirements to perform design, construction and testing. The Specifications shall contain a rewrite of the Circular of Requirements to a "build-to" specification which accurately details the actual equipment, materials, and processes used in the construction of the FRC-B. The Specifications shall be developed using the Coast Guard Engineering Logistics Center Extended Ship Work Breakdown Structure/ Hierarchical Structure Code ([CG ELC ESWBS/HSC](#)).

C.16.5.2. [A014] A Referenced Documents list shall be prepared, and sorted by both specifications section and document type.

- C.16.5.3.** [A014] The specifications shall be separately bound. Text shall be single-column, single spaced with double spacing between numbered paragraphs. Each page of the specification text, except tables shall have every fifth line numbered in the right-hand margin. Each printed page shall have the page number centered at the bottom and be consecutively numbered within each SWBS section using Arabic numbers (e.g. 200-1). The title page, table of contents, and similar pages shall be numbered consecutively using lower case Roman numerals. A new section shall begin at the top of an odd-numbered page. In addition, an electronic version shall be provided on CD-ROM.
- C.16.5.4.** [A014] The Contractor must list all data of any kind that the Government needs to acquire production capacity, using the Government specifications as supplemented by the procurement data provided by the Contractor. The Contractor shall provide a certification that all the RDLP will ensure compliance with the requirements of C.16.

C.17 [A014] INTERIM CONTRACTOR SUPPLY SUPPORT (CLIN 0010)

- C.17.1.** [RFP] The Contractor shall prepare and deliver an Interim Contractor Support Plan (ICSP) in accordance with [CDRL 000-002](#). The ICSP shall:
- C.17.1.1.** [RFP] identify interim support organizational structure, functions, and responsibilities, including interrelationships with subcontractors.
 - C.17.1.2.** [RFP] identify spare and repair parts (Government or contractor-furnished), including method to be employed for identification, computation, acquisition, delivery, and usage recording,
 - C.17.1.3.** [RFP] address support equipment, packaging, handling, storage and transportation requirements, material management and control, including accountability,
 - C.17.1.4.** [RFP] identify facilities for conducting and managing the Interim Contractor Supply Support program, including facilities for material storage, maintenance, and administration,
 - C.17.1.5.** [RFP] address the preparation and submission of required management reports and supply usage data,
 - C.17.1.6.** [RFP] identify procedure to transition from Contractor support to CG support, including appropriate dates,
 - C.17.1.7.** [RFP] identify milestone charts detailing Interim Contractor Supply Support events, including appropriate identification of specific program events that affect the site/unit activation schedule.
- C.17.2.** [RFP] If exercised, the Contractor shall provide Interim Contractor Supply Support (ICSS) in accordance with the requirements and provisions listed in this section and the ICSP. ICSS provides for the replenishment for a period of two (2) years for FRC-B Operating Material and Spares (OM&S) (Supply Support) and special tools. The Contractor shall provide ICSS for a period of two (2) years following from the delivery of the Lead Cutter.

- C.17.3.** [RFP] The Contractor shall use best commercial practices to determine interim supply support allowances to allow the FRC-B to meet the availability requirements in COR Section [076-3.2](#). The Contractor shall warehouse spares and repair parts for warranty, casualty and non-warranty casualty and maintenance actions. While under the warranty period, all casualty repair actions shall be considered warranty items until determined otherwise. The Contractor shall also collect and provide usage and demand data in spreadsheet format at the conclusion of the interim support period as part of the monthly OM&S report to be submitted that month (required by COR Section [083](#)). The Contractor shall order, receive, inspect, store, package and repackage if required.
- C.17.4.** [A005] The unit will requisition maintenance and repair material via the Project Resident Office (PRO). The PRO will inform the Contractor of the requisition, and the Contractor shall provide the material and parts in accordance with [COMDTINST M4400.19B](#). The Contractor shall process ICSS requisitions in a manner that items are delivered to the cutter within a maximum of 72 hours after Contracting Officer notification.

C.18 [A014] SYSTEM STOCK (CLIN 0011)

- C.18.1.** [A014] If exercised, the contractor will obtain system stock items identified in accordance with COR Section [083](#), including the special tools required in COR Section [233-16.1.1](#), and ship to the delivery location specified in Contract Section [F.3](#). The components of the system stock items will be identified and provided once the Contracting Officer has made a determination as to the validity of the items cited for procurement as system stock.

C.19 [A014] INSURANCE SPARES (CLIN 0012)

- C.19.1.** [A014] Each time the option is exercised; the contractor shall obtain either one lot or other specified quantity of insurance spares and ship to the delivery location specified in Contract Section [F.3](#). The components of the insurance spares will be contractor developed based on the contractor's design developed under CLIN 0001 and consistent with the definition of Insurance Spares in COR Section [083](#)) and the following example:

ITEM	UNIT	QUANTITY
(1) Propeller(s) (if fitted) (bored and keyed, bluefit w/keys for fixed pitch propeller systems OR hubs with matched blade sets for controllable pitch propeller systems)	1	SHIPSET
(2) Rudder(s) (if fitted) (Complete with rudder posts and keys)	1	SHIPSET
(3) Waterjet Assemblies (if fitted)	1	SHIPSET
(4) Propulsion Shaft Strut(s)	1	SHIPSET
(5) Propulsion Shaft Bearings	1	SHIPSET
(6) Propulsion Engine(s)	1	SHIPSET
(7) Reduction Gear(s)	1	SHIPSET

ITEM	UNIT	QUANTITY
(8) Loiter Drive(s) (if fitted)	1	SHIPSET
(9) S/S Generator Sets	1	SHIPSET
(10) Propulsion Shafts (Solid, bluefit and with keys and nuts for fixed pitch propeller systems OR hollow w/ oil supply and return lines and inboard pitch control assemblies for controllable pitch propeller systems)	1	SHIPSET
(11) Propulsion Couplings, all fitted, with keys (engine to gear, output flange to shaft, etc.)	1	SHIPSET
(12) Cutter Boat (Complete with outfit and trailer)	1	EACH
(13) Emergency Generator Set(s)	1	SHIPSET

NOTE: The term "Shipset" means one replacement item for each item installed on the FRC. If two identical items are installed on the FRC, a "Shipset" is two of that item.

C.19.2. [RFP] The insurance spares shall be subject to the identical In-Plant Test requirements as those required of equipment designated for lead cutter installation. If there are different test requirements for "first unit" and "follow unit", the "follow unit" testing requirements apply.

C.19.3. [RFP] All engine insurance spares shall be provided in a "drop-in, ready-to-use" condition that does not require any change of components from an in-service engine to an insurance spare engine in order to put the spare into service. Generator Sets shall also include controls, alarms and monitoring panels.

C.20 [A014] BUILDER'S RISK INSURANCE (CLINS 0007F, 0008F, 0013F, 0014F, 0017F, 0018F, 0021F, 0022F, 0025F, 0026F, 0029F, 0030F)

C.20.1. [A014] Until cutters have been accepted by the Government, and to the extent the coverage required under this section is not provided under an existing insurance policy previously procured by the Contractor, each cutter and all materials, equipment and appliances, thereto, including materials, equipment to be furnished by the Government to the Contractor for installation in the cutter, shall be kept insured at a value equal to the Contractor's actual cost of each vessel by the Contractor in the name of the United States of America and the Contractor. Where such insurance is not applicable, the Contractor shall procure and thereafter maintain in the name of the United States of America and the Contractor until each cutter has been accepted by the Contracting Officer, fire and extended coverage insurance during construction and inland or ocean marine all risk cargo insurance during delivery with respect to each cutter and all materials, equipment and appliances therefore, including materials and equipment to be furnished by the Government to the Contractor for installation in each cutter. Where none of the foregoing is applicable, during water trials the Contractor shall procure and thereafter maintain such other insurance for each cutter as will cover the usual marine perils during such trials. Trials include all voyages as contained in the policy including cutter deliveries which are 1200 nautical miles or less; pursuant to the requirements herein insurance coverage for the lead ship delivery voyage to Miami Beach, Florida shall also be provided. This coverage applies to all incidents natural or man-made. Loss and subsequent claims under the

aforementioned insurance shall be payable to the United States Coast Guard, on order, for use of the United States of America to the extent of payment made to the Contractor under this contract plus the amount of loss of or damage to the material, equipment and appliances furnished by the Government and for use of the Contractor to the extent of any remaining balance. At no time shall payment be made to the Contractor for loss of profit under the subject insurance. Such insurance shall be procured from such underwriters as may be approved by the Contracting Officer.

- C.20.2.** [A014] The foregoing insurance requirements shall not be construed as limiting in any way the full responsibility of the Contractor for the supplies under the contract. Notwithstanding the foregoing, the Contractor shall bear the first \$10,000 of loss or damage for the policy deductible of \$50,000 for each occurrence or incident; the Government will bear the remaining \$40,000 of loss or damage for the policy deductible for each occurrence or incident.

Part I – The Schedule
Section D – Packaging and Marking

D.1 [RFP] DELIVERY OF CUTTER(S)

- D.1.1.** [A011] The Fast Response Cutter (CLIN 0007), the optional Low Rate Initial Production (LRIP) cutters (CLIN 0008), and all optional Full Production cutters shall be prepared for delivery and delivered in accordance with Section C, the [Circular of Requirements \(COR\)](#) and the Section H clause entitled “[Delivery of Completed Cutter.](#)”

D.2 [RFP] MARKING OF SHIPMENTS (COMMERCIALY PACKAGED)

- D.2.1.** [RFP] Unless otherwise stated in [Section C](#) or individual CDRLs, the Contractor shall mark all shipments (except the FRC-B vessel(s)) with the contract number (*to be filled in at contract award*). The shipments shall also be marked in accordance with the current edition of Federal Standard 123, "Marking for Shipment (Civil Agencies)" ([FED-STD-123G](#)).

D.3 [RFP] PRESERVATION, PACKING AND PACKAGING

- D.3.1.** [RFP] Except as required for the FRC-B in [section 083 of the COR](#), the Contractor shall preserve, pack, and package all items in accordance with best established and functioning commercial practices to ensure delivery at destination and to prevent deterioration of items and damages due to the hazards of shipping, handling, and storage. Standard commercial preservation, packing, and packaging, practices shall be employed.

D.4 [RFP] MARKINGS OF WARRANTED ITEMS

- D.4.1.** [RFP] Pursuant to the requirements of [FAR 46.706\(b\)\(5\)](#), the Contractor shall stamp or mark the items delivered or otherwise furnish notice with the items of the existence of the warranty. Brief markings shall include:
- a. A statement that a warranty exists,
 - b. The substance of the warranty,
 - c. Its duration, and
 - d. Whom to notify if the supplies are found to be defective.
- D.4.2.** [RFP] For commercial items, the Contractor's trade practice in warranty marking is acceptable if sufficient information is presented for supply personnel and users to identify warranted supplies.

Part I – The Schedule

Section E – Inspection and Acceptance

E.1 [RFP] FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

- E.1.1. [RFP] This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far/>

Number	Title	Date
FAR 52.246-2	Inspection of Supplies – Fixed Price	AUG 1996
FAR 52.246-3	Inspection of Supplies – Cost-Reimbursement	MAY 2001
FAR 52.246-11	Higher-Level Contract Quality Requirement	FEB 1999
FAR 52.246-16	Responsibility for Supplies	APR 1984

E.2 [RFP] ACCEPTANCE OF DATA AND DOCUMENTATION

- E.2.1. [RFP] All contract data deliverables including drawings, reports, calculations and manuals will be reviewed by the Coast Guard for various purposes, including progress monitoring, quality checks (random and systematic), and to ensure the Coast Guard has a reasonable expectation of the Contractor meeting the contract requirements. Deliverables may be returned with comments, recommendations, or with advisory notes concerning contract compliance.
- E.2.2. [RFP] Approvals will be limited to the extent defined in the contract. Approval of design deliverables will not relieve the Contractor from meeting the contract requirements including, but not limited to, performance and verification requirements. Absence of comments by the Coast Guard shall not relieve the Contractor of responsibility for complying with the requirements of the contract.
- E.2.3. [RFP] Final approval and/or acceptance of documentation required herein will be by letter of approval and/or acceptance of the Contracting Officer, or electronic equivalent. Any acknowledgment of receipt of data or documentation shall not be construed as a waiver of review or as an acknowledgment that the data or documentation is in conformance with the contract.

E.3 [RFP] ACCEPTANCE OF FAST RESPONSE CUTTER

- E.3.1. [RFP] Preliminary Acceptance. Upon satisfactory completion of the applicable tests, trials, and delivery requirements identified in the Statement of Work, the Government will preliminarily accept the Fast Response Cutter – B Class (FRC-B). The Contractor shall prepare and execute, with the Government representative accepting the FRC, a [DD Form 250](#) Material Inspection and Receiving Report (MIRR) to document Preliminary Acceptance. The Contractor shall furnish the original and four

duplicate originals to the Contracting Officer who will be the Government official accepting the FRC-B. Warranty periods shall begin upon Preliminary Acceptance.

- E.3.2.** [RFP] Final Acceptance. Upon the expiration of all warranty periods, and resolution of any outstanding deficiencies and warranty claims, the Government will accept the FRC-B. The Contractor shall prepare and execute, with the Contracting Officer's Technical Representative (COTR), a [DD Form 250](#) Material Inspection and Receiving Report (MIRR) to document Final Acceptance. Furnish one copy to the COTR at the Project Resident Office and the original to the Contracting Officer.
- E.3.3.** [RFP] Each vessel shall have its separate [DD Form 250](#) with each sub-CLIN separately identified, with prices.

E.4 [RFP] ACCEPTANCE OF OTHER SUPPLIES

- E.4.1.** [RFP] The Contractor shall deliver all other supplies on a [DD Form 250](#). The Government will inspect and indicate acceptance on the DD Form 250.

Part I - The Schedule
Section F – Deliveries or Performance

F.1 [RFP] FAR 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

- F.1.1.** [RFP] This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://www.arnet.gov/far/>

Number	Title	Date
FAR 52.242-15	Stop Work Order	Aug 1989
FAR 52.242-17	Government Delay of Work	Apr 1984
FAR 52.247-30	FOB Origin, Contractor's Facility	Feb 2006
FAR 52.247-34	FOB Destination	Nov 1991
FAR 52.247-55	FOB Point of Delivery of Government Furnished Property	Jun 2003

F.2 [A011] TIME OF DELIVERY

- F.2.1.** [A011] At no time shall the delivery of a subsequent hull predate the delivery of a preceding hull. Additionally, no hull will be delivered less than 56 days after the delivery of the preceding hull.

- F.2.2.** [A014] The Government requires delivery to be made according to the following schedule:

REQUIRED DELIVERY SCHEDULE		
ITEM	NAME	PERFORMANCE/DELIVERY PERIOD
0001	Design of Fast Response Cutter (FRC-B)	Lead Cutter Delivery Date (LCDD)
0001A	Design Data	LCDD
0002	System Safety Program	Throughout the design, construction, and delivery of the Lead Cutter.
0003	Human Engineering Program	90 DAC
0004	Training Equipment Package	730 DAC
0005	Training Development and Data	In Accordance With (IAW) Contract Data Requirements List (CDRL(s))
0006	Model	LCDD
0007A	Construction of FRC-B (Lead Hull)	730 DAC
0007B	Warranty (Lead Hull)	Associated Cutter Delivery Date (ACDD)
0007C	Data (Lead Hull)	IAW CDRL
0007D	Supply Support (Lead Hull)	ACDD

REQUIRED DELIVERY SCHEDULE		
ITEM	NAME	PERFORMANCE/DELIVERY PERIOD
0007E	Training (Lead Hull)	90 Days prior to LCDD
0008A	Construction (LRIP FRC-B)	1st Hull: 532 Days After Exercise of Option Each Subsequent LRIP Hull: 90 Days After Previous Hull (DAPH)
0008B	Warranty (LRIP FRC-Bs)	ACDD
0008C	Data (LRIP FRC-Bs)	IAW CDRL
0008D	Supply Support (LRIP FRC-Bs)	ACDD
0008E	Training (First LRIP FRC-Bs)	90 Days Prior To ACDD (DPACDD)
0009 0015 0019 0023 0027 0031	Reprocurement Data & License Package	405 DAOE
0010	Interim Contractor Supply Support	LCDD
0011	System Stock	180 DAOE
0012A 0016A 0020A 0024A 0028A 0032A	Insurance Spares – Propellers	360 DAOE
0012B 0016B 0020B 0024B 0028B 0032B	Insurance Spares – Rudders	360 DAOE
0012C 0016C 0020C 0024C 0028C 0032C	Insurance Spares – Water Jet Assemblies	360 DAOE
0012D 0016D 0020D 0024D 0028D 0032D	Insurance Spares – Propulsion Shaft Struts	360 DAOE
0012E 0016E 0020E 0024E 0028E 0032E	Insurance Spares – Propulsion Shaft Bearings	360 DAOE

REQUIRED DELIVERY SCHEDULE		
ITEM	NAME	PERFORMANCE/DELIVERY PERIOD
0012F 0016F 0020F 0024F 0028F 0032F	Insurance Spares – Propulsion Engines	360 DAOE
0012G 0016G 0020G 0024G 0028G 0032G	Insurance Spares – Reduction Gears	360 DAOE
0012H 0016H 0020H 0024H 0028H 0032H	Insurance Spares – Loiter Drives	360 DAOE
0012I 0016I 0020I 0024I 0028I 0032I	Insurance Spares – S/S Generator Sets	360 DAOE
0012J 0016J 0020J 0024J 0028J 0032J	Insurance Spares – Emergency Generator Set	360 DAOE
0012K 0016K 0020K 0024K 0028K 0032K	Insurance Spares – Propulsion Shafts	360 DAOE
0012L 0016L 0020L 0024L 0028L 0032L	Insurance Spares – Propulsion Couplings	360 DAOE
0012M 0016M 0020M 0024M 0028M 0032M	Insurance Spares – Cutter Boat	360 DAOE
0013A 0017A	Construction of FRC (4 Each)	Initial hull in each option shall be delivered 476 Calendar Days After Option Exercise (DAOE) For each remaining hull in each option, they shall be delivered 56 Calendar Days After Previous Hull (DAPH) delivery.

REQUIRED DELIVERY SCHEDULE		
ITEM	NAME	PERFORMANCE/DELIVERY PERIOD
0021A 0025A 0029A	Construction of FRC (4 Each)	Initial hull in each option shall be delivered 476 Calendar Days After Option Exercise (DAOE) For each remaining hull in each option, they shall be delivered 90 Calendar Days After Previous Hull (DAPH) delivery
0014A 0018A 0022A 0026A 0030A	Construction of FRC (6 Each)	Initial hull in each option shall be delivered 476 Calendar Days After Option Exercise (DAOE) For each remaining hull in each option, they shall be delivered 56 Calendar Days After Previous Hull (DAPH) delivery.
0013B 0014B 0017B 0018B 0021B 0022B 0025B 0026B 0029B 0030B	Warranty	Associated Cutter Delivery Date (ACDD)
0013C 0014C 0017C 0018C 0021C 0022C 0025C 0026C 0029C 0030C	Data	IAW CDRL
0013D 0014D 0017D 0018D 0021D 0022D 0025D 0026D 0029D 0030D	Supply Support	ACDD
0013E 0014E 0017E 0018E 0021E 0022E 0025E 0026E 0029E 0030E	Training	Training shall be delivered 90 days prior to cutter delivery date for each hull in each option

- F.2.3.** [A011] A System Safety Program as required by COR Section 077 will be implemented and conducted during the design and construction of the lead FRC-B.

F.3 [RFP] PLACE OF DELIVERY – DESTINATION

- F.3.1.** [RFP] Data shall be delivered as required in Block 14 – Distribution of the appropriate Contract Data Requirements List (CDRL), or as required by the Schedule or Statement of Work.
- F.3.2.** [RFP] The Fast Response Cutter – B Class (FRC-B) lead hull shall be delivered fully outfitted and tested, FOB Destination to the following location(s) or as otherwise specified by the Contracting Officer:

Commanding Officer
Integrated Support Command
100 MacArthur Causeway
Miami Beach, FL 33139

- F.3.2.1.** [A010] Initial binning shall take place at the contractor's facility. Custody transfer shall take place at the cutter's homeport. Per COR Section 083-6.4.6, all allowance material received by the Contractor after cutter delivery and prior to departure from the Contractor's facility shall be turned over to the cutter. Contractor furnished onboard allowance material received after cutter departure shall be packaged and shipped, at Contractor's expense, in accordance with instructions provided by the Coast Guard.
- F.3.3.** [RFP] The optional FRC-B low rate initial production and full production hulls shall be delivered fully outfitted and tested FOB Origin (Contractor's Facility), or as otherwise specified by the Contracting Officer.
- F.3.4.** [RFP] The government is not obligated and does not intend to accept any cutter prior to the delivery date agreed to in the Integrated Master Schedule required by the COR (Section 042).
- F.3.5.** [A007] The FRC-B Models shall be delivered fully assembled, FOB Destination to the following location:

Commandant (CG-936)
US Coast Guard Headquarters
1900 Half Street, Rm: 09-0411
Washington DC 20593-0001

- F.3.6.** [A007] Interim Contractor Supply Support (ICSS) shall be delivered FOB Destination to the following location(s):

Commanding Officer (Code 031)
Engineering Logistics Center
Receiving Room, Building 86
2401 Hawkins Point Road
Baltimore, MD 21226-5000

- F.3.7.** [A007] Supply Support items shall be delivered FOB Destination to the following location(s) or as otherwise specified by the Contracting Officer:

HM&E:

Commanding Officer (Code 031)
Engineering Logistics Center
Receiving Room, Building 86
2401 Hawkins Point Road
Baltimore, MD 21226-5000

Electronics:

Commanding Officer
Engineering Logistics Center
Warehouse Annex
6751 Alexander Bell Drive
Columbia, MD 21226-2102

- F.3.8.** [A007] Insurance Spares shall be delivered FOB Destination to the following location(s) or as otherwise specified by the Contracting Officer:

Commanding Officer (Code 031)
Engineering Logistics Center
Receiving Room, Building 86
2401 Hawkins Point Road
Baltimore, MD 21226-5000

- F.3.9.** [A007] System Stock shall be delivered FOB Destination to the following location(s):

Commanding Officer (Code 031)
Engineering Logistics Center
Receiving Room, Building 86
2401 Hawkins Point Road
Baltimore, MD 21226-5000

- F.3.10.** [RFP] Training Equipment Package (HM&E) shall be delivered FOB Destination to the following location(s):

Commanding Officer
Attn: TBD
USCG Training Center Yorktown
End of RT 238
Yorktown, VA 23690-5000

- F.3.11.** [A010] Training Equipment Package (C4ISR Suite / Pilothouse Console) shall be delivered FOB Destination to the following location(s):

Commanding Officer
Attn: TBD
USCG Training Center Petaluma
599 Tomales Road
Petaluma, CA 94952-5000

F.4 [RFP] PLACE OF DELIVERY - GOVERNMENT FURNISHED EQUIPMENT

- F.4.1.** [RFP] The Government Furnished Equipment (GFE) identified in [Attachment 7](#) to Section J will be delivered within thirty (30) days of contract award to the Contractor-designated location, in accordance with FAR [FAR 52.247-55](#) incorporated at F.1.

F.5 [RFP] PLACE OF DELIVERY - GOVERNMENT FURNISHED INFORMATION

- F.5.1.** [RFP] The Government Furnished Information (GFI) identified in [Attachment 6](#) to Section J will be delivered within thirty (30) days of contract award to the Contractor-designated location, in accordance with [FAR 52.247-55](#) incorporated at F.1.

Part I – The Schedule
Section G – Contract Administration Data

G.1 [RFP] ADDRESS OF CORRESPONDENCE

- G.1.1.** [RFP] All correspondence except as otherwise specified by the Contracting Officer shall be directed to the following addresses:

Contracting Officer
Project Resident Office (PRO)
[exact address to be inserted after contract award]
M/F: Contract No: [to be inserted after contract award]

G.2 [RFP] GOVERNMENT REPRESENTATIVES

- G.2.1.** [RFP] The Contracting Officer may, upon contract award or thereafter, name representatives with titles such as Contracting Officer’s Technical Representative(s), Contracting Officer’s Representative (COR), Coast Guard Acceptance Representative, etc. Such individuals, if appointed, will be named in writing by the Contracting Officer. The letter of appointment will indicate the individuals, titles, and stipulate the rights, responsibilities, and limitations of their appointment.
- G.2.2.** [RFP] In any event, no such named individual has the authority to issue any direction under this contract either technical or otherwise, which constitutes a change to the terms, conditions, price or delivery schedule of the contract. Only the Contracting Officer is authorized to alter the contract in any manner.

G.3 [RFP] INVOICING REQUIREMENTS

- G.3.1.** [A005] In addition to the requirements of Section I clause [52.232-25](#), Prompt Payment, and [52.232-16](#), Progress Payments, clause, the requisition/purchase request number found in block six of SF 33 must be included in an invoice or a request for contract financing payment for it to constitute a proper request for contract payment. When required by the Truth in Negotiations Act, invoices shall be certified by the Contractor with regards to the allowable and allocable costs incurred in the performance of the work as of the last day of the invoice period. In keeping with the requirements of clause entitled “Progress Payments” include CLIN, sub-CLIN and percent complete information in support of the request for contract financing payment.
- G.3.2.** [RFP] An original and two (2) information copies shall be submitted to the Contracting Officer at the address below. Failure to submit directly to this office will delay payment.

Contracting Officer
Project Resident Office (PRO)
[exact address to be inserted after contract award]
M/F: Contract No: [to be inserted after contract award]

G.4 [RFP] CONTRACTOR REPRESENTATIVES AUTHORIZED TO SIGN DOCUMENTS

- G.4.1.** [RFP] Upon execution of the contract, the Contractor shall provide a list to the Contracting Officer which identifies the Contractor representative(s) authorized to sign written communications and/or make obligations on behalf of the Contractor. The list shall specifically contain the following:
- a. Name of individual authorized to sign Contractor-generated technical data and Contractor management type documentation; and
 - b. Type of documentation each individual is authorized to sign.
- G.4.2.** [RFP] Upon addition or deletion of one or more names, the list shall be revised accordingly, and the updated list shall be provided to the Contracting Officer.

G.5 [RFP] RESPONSIBLE OFFICIAL(S) WHO CAN RECEIVE NOTIFICATION OF AN IMPROPER INVOICE AND ANSWER QUESTIONS REGARDING INVOICE

- G.5.1.** [RFP] The Contractor has designated the following official(s) responsible for receiving notification of an improper invoice and answering questions regarding invoices:

Name(s):

Address: [To be inserted upon contract award.]

Telephone Number:

E-mail:

Part I - The Schedule
Section H – Special Contract Requirements

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H.1 [RFP] ACCESS TO THE CONTRACTOR'S FACILITY

H.1.1. [RFP] Officers, employees, and associates of other prime contractors with the Government and their subcontractors, shall, as authorized by the Contracting Officer, have at all reasonable times, admission to the Contractor's facility, where and as required, and be permitted within the Contractor's facility to perform and fulfill their respective obligations to the Government. The Contractor shall make reasonable arrangements with the Government or contractors of the Government, as shall have been identified and authorized by the Contracting Officer, to be given admission to the Contractor's facility, office space, work areas, storage or shop areas, or other facilities and services reasonable and necessary for the performance of the respective responsibilities involved. Reasonable access shall be provided to the Government to carry out its responsibilities under this contract.

H.2 [RFP] ADDITIONAL CONTRACTOR RESPONSIBILITY

H.2.1. [RFP] Inasmuch as the design will be developed by the Contractor, the Contractor assumes responsibility for the design's completeness, accuracy, adequacy, and compliance with the Circular of Requirements. In the event that there are any errors or omissions in the aforementioned design, or in the accompanying plans that affect the design and construction effort, the Contractor shall correct such errors and omissions and all necessary rework at the written direction of the Contracting Officer, regardless of whether such error or omission occurred during or after the Warranty period, with no increase in contract price or extension in boat delivery date.

H.3 [RFP] CUTTER CLASSIFICATION/CERTIFICATION REQUIREMENTS

H.3.1. [RFP] Certificates of Inspection, Sanitary Construction, Deratting and other necessary certificates and documents demonstrating approval by regulatory bodies or indicating compliance with the contract specifications shall be obtained by the Contractor. Before delivery of each boat, the original certificates/documents shall be mounted onboard the boat as required either by the issuing regulatory body or as directed by the Contracting Officer.

H.4 [RFP] CONFIGURATION MANAGEMENT

H.4.1. [RFP] *General Requirement.* The Contractor shall develop and execute a Configuration Management Plan that provides and maintains configuration control. The contractor shall prepare and submit engineering change proposals (ECP's) and requests for deviations (RFDs) together with supporting documentation, affecting or concerning the FRC(s) to be delivered under this contract, in accordance with the following: (1) this clause, (2) the [CDRL reference in Section J](#) of this contract, and (3) all other contractual documentation. In the event of any conflict or inconsistency between the above listed configuration requirements, they shall take precedence and govern in decreasing order of importance, from (1) through (3) above.

H.4.2. [RFP] *Baseline.* For configuration control purposes, all contractual documentation in effect at the time of contract award shall constitute the Contract Baseline which shall be considered incorporated into the baseline documentation. The baseline set forth above includes, but is not limited to, all drawings and other documents, such as Government specifications, Government standards, Coast Guard standard drawings, and coordination drawings, which are referenced in the Circular of Requirements and which are mandatory in that compliance therewith is required and no departure or

deviation therefrom is allowed except with the approval of the Contracting Officer. Further, certain of these mandatory documents such as coordination drawings or interface control drawings may not be in existence on the effective date of this contract or may have to be revised for application to the work under this contract, and are to be prepared or revised by the Contractor under this or any other contract, by the Government, or by another Contractor during the performance of this contract.

- H.4.3.** [RFP] Said baseline does not include drawings and other documents forming part of said specifications which are specified to be illustrative, typical, or for guidance. Further, said baseline does not include drawings and other documents, such as working drawings and test memoranda, which are non-mandatory to the extent that, under the provisions of this contract, the Contractor may, but is not required to, use and comply with such drawings and other documents in the performance of this contract, whether they are prepared or revised by the Contractor under this or any other contract, or obtained from a design sub-contractor and revised or not revised by the Contractor. However, this clause does not in any way modify or supersede other requirements of this contract for submission to, or approval by, the Government, or both, of drawings and other documents which are not included in said baseline and which are prepared or revised by the Contractor in connection with the performance of this contract, including revisions of or changes to such drawings or other documents subsequent to initial submission to, or approval by, the Government, or both.
- H.4.4.** [A005] *ECP Requirement and Initiation.* In addition to preliminary and formal ECPs which the Contractor may initiate and propose and in addition to changes which the Contracting Officer may issue pursuant to the Section I FAR clause [FAR 52.243-1](#) entitled "Changes – Fixed Price", the Contracting Officer, for purposes of arriving at a decision as to whether to incorporate an engineering change in this contract, may from time to time and at any time, in writing, require the Contractor to prepare and submit a formal ECP with respect to an engineering change initiated and proposed by the Contracting Officer within the general scope of this contract; or to revise any previously submitted formal ECP, whether initiated by the Contractor or the Contracting Officer; or to submit a formal ECP as the result of a preliminary ECP. Upon receipt of such written requirement, the Contractor shall submit an initial or revised formal ECP, including supporting data, within such time as the Contracting Officer may reasonably specify in view of the priority assigned to the ECP, or, if no time is specified, within 45 days, or such further time as the Contracting Officer may allow. The Contractor shall be reimbursed for preparation, submittal or modification to any ECP in accordance with the following:
- H.4.4.1.** [A005] In the event that an engineering change resulting from a formal ECP is incorporated in this contract, the equitable adjustment in contract price shall include an amount on account of the cost of the engineering and other work of the Contractor in preparing or revising the ECP, or both.
- H.4.4.2.** [A005] In the event that such engineering change is not incorporated in this contract, the engineering and other work of the Contractor in preparing or revising the ECP, or both, shall be processed as if ordered by the Contracting Officer under the Contract Clause entitled "CHANGES - - FIXED-PRICE", [FAR 52.243-1](#), and the Contractor shall be entitled to an equitable adjustment in contract price on account of such work but shall not be entitled to any adjustment in the delivery schedule; provided, however, that no adjustment in contract price shall be made with respect to any preliminary ECP or with respect to a formal

ECP prepared and submitted by the Contractor which did not result from a requirement of the Contracting Officer or his representative designated by him in writing (i) to submit a formal ECP with respect to an engineering change proposed by the Government, (ii) to revise a formal ECP previously initiated, prepared and submitted by the Contractor or (iii) to submit a formal ECP as a result of a preliminary ECP, as provided for in this paragraph.

- H.4.4.3.** [A005] Failure to agree to such equitable adjustment in contract price provided for in paragraph H.4.4.2 shall constitute a dispute concerning a question of fact within the meaning of the Section I clause [FAR 52.233-1](#) entitled "DISPUTES". All Engineering Change proposals submitted by the contractor unilaterally without a request from the government are not subjected to the provisions of this clause and are not eligible for equitable adjustment for ECP production costs, including Value Engineering Change Proposals.
- H.4.5.** [RFP] *"Firm Offer" and Contract Acceptance of ECPs.* The Contractor's "Estimated Cost/Savings under Contract" for each ECP, whether submitted on the Contractor's own initiative or submitted in response to a requirement of the Contracting Officer as an initial or revised ECP, as provided in paragraph H.4.4, shall constitute an irrevocable proposal or offer for sixty (60) days from receipt of the ECP by the Government unless such period of time is extended by mutual agreement. During this period the Contracting Officer may:
- H.4.5.1.** [RFP] Accept such proposal or offer by mailing or otherwise presenting to the Contractor a modification of this contract for execution by the Contractor, which modification shall reflect the engineering change(s) contained in the ECP, the consequent changes in the delivery schedule, if any, and the Contractor's estimated net increase or decrease in contract price, and the Contractor agrees to execute such a modification within five (5) working days after receipt; or
- H.4.5.2.** [RFP] Conditionally accept such offer by mailing or otherwise presenting to the Contractor a bilateral modification of this contract, for execution by the Contractor, which modification shall be the same as in subparagraph H.4.5.1 immediately above, except that it shall set forth the Contractor's estimate as a ceiling or a maximum change in contract price in the case of net increase and as a floor or a minimum change in the contract price in the case of a net decrease, and except that it may set forth the Contractor's proposed change in delivery schedule, if any, as a maximum extension or a minimum advance as the case may be; and the Contractor agrees to execute such a modification within fifteen (15) working days after receipt, and in the event of such a modification, the parties shall promptly negotiate in good faith to arrive at an adjustment within 180 days after the issuance of the modification or upon completion of forty percent (40%) of the work to be performed by the modification, whichever occurs earlier, in the contract price and the delivery schedule, if involved; or
- H.4.5.3.** [RFP] Begin good faith negotiations leading to a bilateral modification of this contract which incorporates the engineering change(s) and such equitable adjustments as may be appropriate. In any event, the Contractor's estimate of net increase/decrease in the contract price or net cost of change, and the bilateral modification of this contract making the equitable adjustment, shall be conclusively presumed to include an amount or factor for any and all delays and disruptions that may result from incorporating in this contract the engineering

change(s) whether initiated and proposed by the Contractor or by the Contracting Officer, priced out by the modification.

- H.4.6.** [RFP] *DD Form 1692 and Certificate*. In addition to any submittal of an initial or revised formal ECP, the Contractor agrees to submit, on request of the Contracting Officer, a completed and signed [DD Form 1692](#) "Engineering Change Proposal", in as many copies as the Contracting Officer may reasonably require and a signed "Certificate of Current Cost or Pricing Data".
- H.4.7.** [RFP] *Copies and Distribution of ECPs and Requests for Deviations*. Each ECP for an engineering change and each request for a major or minor deviation; prepared by the Contractor shall be submitted in four copies to the Contracting Officer.
- H.4.8.** [RFP] *Necessity for Contract Modification*. Notwithstanding any approvals or other action respecting an ECP, no engineering change shall be effective unless and until a modification to this contract is executed as provided for in paragraph H.4.5 or the Contracting Officer issues a modification to the contract pursuant to the Section I clause entitled "Changes – Fixed Price" ([FAR 52.243-1](#)). Pending such a modification, the Contractor shall proceed diligently with contract performance without regard to the effect of any such proposed engineering change. Notwithstanding any approvals or other action respecting a request for a major, or minor deviation, no such deviation shall be effective unless and until granted or authorized by a modification to this contract signed by the Contracting Officer; provided, however, that a minor deviation which the Contracting Officer finds does not change the Contractor's cost of performance, or that the decrease in such cost is not more than the administrative cost to the Government of processing the necessary modification, may be granted, authorized, and effective by and upon the signing or cosigning by the Contracting Officer of the Approval Block (27b) of [DD Form 1694](#) or upon the signing or cosigning by the Contracting Officer of the Approval Block of the Contractor's existing form(s) that present data which is equivalent to that which is required by DD Form 1694. In this case, a copy of the signed DD Form 1694, or its equivalent, shall be transmitted to the Contractor. All such approved minor deviation, for each Patrol Boat, shall be incorporated into the contract by modification prior to Government inspection and acceptance of each Patrol Boat.
- H.4.9.** [RFP] *VECPs*. This contract contains a Value Engineering clause, any cost reduction proposals submitted pursuant to that clause shall be submitted in accordance with Section I clause [52.248-1](#).
- H.4.10.** [RFP] *Saving Provision*. Nothing contained in this clause shall be construed as:
- H.4.10.1.** [RFP] Obligating the Government in any manner whatsoever to issue or approve any changes or deviations which may be initiated or proposed by the Contractor, or any changes which may be initiated and proposed by the Contracting Officer as provided for in paragraph H.4.4, or
- H.4.10.2.** [RFP] Altering in any manner whatsoever the rights of either party under the Section I clause entitled "Changes – Fixed Price" ([FAR 52.243-1](#)).

H.5 [A014] NOTIFICATION OF CONTRACT PROBLEMS

- H.5.1.** [A014] The primary purpose of this requirement is to obtain prompt reporting of any contract problem. The parties acknowledge that proper administration of this contract requires that potential problems be identified and resolved as they arise.

The Contractor shall use Contract Problem Identification Reports (CPIR) to promptly notify the Government of actual or potential contract problems and for establishing an early dialogue between the Contractor and the Government with regard thereto.

- H.5.2.** [A014] As used in this clause, a "contract problem" is a fact, circumstance, or any conduct of which the Contractor is aware that does, will, or reasonably is anticipated to:
- H.5.2.1.** [A014] Have a significant or substantial impact on the delivery schedule or completion of contract performance, or the cost of performance of the contract (increase or decrease), or
 - H.5.2.2.** [A014] Require a modification to the contract or specification(s).
- H.5.3.** [A014] The terms "significant" and "substantial" shall be interpreted in the same manner as they would be interpreted by a reasonably prudent business person under the relevant circumstances.
- H.5.4.** [A014] The Contractor shall report each contract problem promptly, and in no event later than ten calendar days, after the Contractor identifies such contract problem. A written CPIR ([CDRL 000-003](#)) shall be transmitted to the Contracting Officer at the address listed in [Section G.1](#). Each CPIR shall be entitled "Contract Problem Identification Report", shall be dated, numbered sequentially, and shall set forth, on the basis of the best and most complete information then known to the Contractor to include but to not be limited to the following:
- H.5.4.1.** [A014] The nature of the contract problem;
 - H.5.4.2.** [A014] The date on which the contract problem arose and the date on which the contract problem was identified as such;
 - H.5.4.3.** [A014] The anticipated direct and consequential effects of the contract problem upon the delivery schedule or completion of contract performance or the cost of performance of the contract;
 - H.5.4.4.** [A014] The Contractor's recommendation or resolution of the contract problem.
 - H.5.4.5.** [A014] The name, function, and activity of the individuals directly involved in or knowledgeable about such contract problem;
 - H.5.4.6.** [A014] The identification of any documents and the substance of any oral communication relating to the contract problem;
 - H.5.4.7.** [A014] Identification of elements of contract performance, supplies and/or services which are or may be affected for which the Contractor or the Government may seek an equitable adjustment or other relief afforded under the Contract but not limited to:
 - H.5.4.7.1.** [A014] Hulls that may or might have been affected by the identified problem;
 - H.5.4.7.2.** [A014] To the extent practicable, labor or materials or both which have been or might be added, deleted, or wasted by the identified problem;
 - H.5.4.7.3.** [A014] To the extent practicable, the Contractor's preliminary order of magnitude estimate of cost and schedule effect of the identified problem; and,
 - H.5.4.7.4.** [A014] What and in what manner are the particular technical requirements or contract requirements regarded as a contract problem.

- H.5.5.** [A014] Follow-up status reports of each contract problem, identified by the original CPIR number, shall be furnished monthly, or more frequently as required by the Contracting Officer. A final follow-up report shall be furnished immediately following resolution of each contract problem.
- H.5.6.** [A014] CPIR(s) shall not be submitted when notice of the same contract problem is required to be furnished to the Government pursuant to any other clause of this contract. The submission of a CPIR, however, does not relieve the Contractor of its obligations to provide notice required under any other clause of this contract.
- H.5.7.** [A014] Continued Performance. The Contractor shall take no action to implement a potential change resulting from a contract problem until advised by the Contracting Officer in writing as provided in H.5.8, below, unless the potential change was previously directed by the Contracting Officer, in which case the Contractor shall conform therewith. Nothing in this paragraph shall excuse the Contractor from proceeding with contract work other than implementation of the potential change or from proceeding in accordance with directions issued by the Contracting Officer.
- H.5.8.** [A014] Government Response to a CPIR. The Contracting Officer will promptly, and in any event within twenty-one (21) calendar days after receipt of a CPIR, respond thereto in writing. Failure of the Government to respond within the time required above shall be deemed a countermand of any fact, circumstance or conduct regarded by the Contractor as a contract problem.
- H.5.9.** [A014] Equitable Adjustments. Equitable adjustments for changes confirmed by the Contracting Officer shall be made pursuant to the Section I clause entitled "Changes—Fixed Price".
- H.5.10.** [A014] *Periodic Release of Government Liability for Unidentified Problems.* Despite good faith best efforts, occasions may arise in which the Contractor does not provide notice within the time periods specified in H.5.4, above. Accordingly, prior to the end of the first and third quarters of each calendar year through the period of performance of this contract, beginning with the first quarter of 2009, the Contractor shall deliver to the Government an executed bilateral contract modification (Standard Form 30), in accordance with [CDRL 000-005](#), covering the six month period of time ending with the second and fourth quarters, respectively, of the preceding year, with such specific exceptions, if any, as are identified by the Contractor. If the Contractor cites specific exceptions to the release, the Contractor shall concurrently provide the Contracting Officer with notice, containing the information set forth in paragraph H.5.4 of this requirement, for each item excepted from the release. However, the release required by this requirement shall not make unallowable any costs which are otherwise allowable under any other requirement of this contract.
- H.5.10.1.** [A014] Within sixty (60) days of the receipt of the release, the Contracting Officer will sign and return a copy of the release to the contractor. If the Contracting Officer fails to execute and return the release within the required time, then the release shall be deemed to be void, and of no effect for the period involved.
- H.5.10.2.** [A014] If the release, in accordance with H.5.10 above, is not provided to the Government by the Contractor in the time required, the Contracting Officer may execute the release as described in [CDRL 000-005](#) and send it to the Contractor. If the Contractor fails to execute the release and return it, to the government (with any specific exceptions) within sixty (60) days of receipt thereof, the required release shall then be deemed effective as if signed by the Contractor.

H.6 [RFP] DELIVERY OF COMPLETED CUTTER

- H.6.1.** [RFP] NOTE: The term “cutter” as used in this clause refers to each cutter to be constructed and delivered under this contract.
- H.6.2.** [RFP] The cutter shall not be presented for Preliminary Acceptance Trials (PAT) until it is determined by the Contracting Officer that the Contractor has satisfactorily carried out those parts of the shipboard tests and Builder’s At-Sea Trials for which the Contractor is responsible, and that the Contractor has satisfactorily corrected all deficiencies discovered before, during or after completion of all Builder’s At-Sea Trials, unless otherwise agreed to in writing by the Contracting Officer.
- H.6.3.** [RFP] The Contractor shall be responsible for scheduling an interval between the satisfactory completion of PAT and delivery of the cutter during which the Contractor shall satisfactorily correct all deficiencies, whether discovered before, during, or after completion of the PAT. This interval shall be a minimum of 49 days for the lead cutter; if options are exercised, the interval shall be a minimum of 42 days for the LRIP cutters, and a minimum of 35 days for the full production cutters.
- H.6.4.** [A005] Upon satisfactory completion of Preliminary Acceptance Trials and the correction of deficiencies as provided in H.6.3 above, the Contractor shall deliver the cutter to the Government for preliminary acceptance. The cutter shall be delivered to the location identified in [Section F](#), and in the light ship condition (as defined in [COR section 096](#)) plus 95% fuel, 95% lubricating oil, 100% potable water, sewage tank empty and dirty oil tank empty.
- H.6.5.** [RFP] Following preliminary acceptance, the Government may, pursuant to the warranties, during the warranty period, make the cutter available to the Contractor, at the Contractor's plant, or require the Contractor to come to the cutter, (i) for correction of defects noted at the time of preliminary acceptance, or which are discovered during the warranty period, and (ii) for the performance of any additional work required by change orders issued pursuant to the "Changes" clause of this contract prior to the preliminary acceptance and not theretofore performed. If the Government elects to make the cutter available to the Contractor at the Contractor's plant or onboard the cutter for the accomplishment of the above described work following preliminary acceptance, the Contractor agrees to accept the cutter(s) and perform the work. If this repair period begins during but extends beyond the expiration of the warranty period, the Government may leave the cutter at the Contractor's plant or return the cutter thereto for the correction of defects not previously corrected and for the performance of any additional work required by change orders issued pursuant to the "Changes" clause of this contract prior to the preliminary acceptance and not theretofore performed.
- H.6.6.** [RFP] The Contractor shall exercise reasonable care to protect the cutter at all times until the delivery of the cutter, and thereafter during such times as the cutter is at the Contractor's plant during the warranty period or during the repair period if the latter extends beyond the expiration of the warranty period, except for periods of time when the entire cutter is made available to the Government. During such periods, while the cutter is at the Contractor's plant, the Contractor shall provide assistance to protect and service the cutter, and shall effect any correction of defects or performance of incomplete work, to the extent permitted or required by the Government.

- H.6.7.** [RFP] In accordance with the inspection provisions of the contract, all actions of the Government pursuant to this clause shall be performed in such a manner as to not unduly delay the work.

H.7 [RFP] DOCUMENTATION OF REQUEST FOR EQUITABLE ADJUSTMENT

- H.7.1.** [RFP] For the purpose of this clause, the term "change" includes:

- H.7.1.1.** [RFP] A change made pursuant to a written order designated as a "change order;"
- H.7.1.2.** [RFP] An engineering change proposed by the Government or the Contractor pursuant to other clauses of this contract; and
- H.7.1.3.** [RFP] Any act or omission to act on the part of the Government in respect to which a request is made for equitable adjustment under the Section I clause [FAR 52.243-1](#) Changes – Fixed Price or any other article or clause of this contract.

- H.7.2.** [RFP] Whenever the Contractor requests or proposes an equitable adjustment of \$25,000.00 or more per cutter with respect to a change made pursuant to a written order designated as a "change order" or with respect to a proposed engineering change and whenever the Contractor requests an equitable adjustment in any amount with respect to any other act or omission to act on the part of the Government, the proposal supporting such request shall contain the following information for each individual item or element of the request:

- H.7.2.1.** [RFP] A description of the work required by the contract before the change, which has been deleted by the change;
- H.7.2.2.** [RFP] A description of the work deleted by the change which already had been completed. The description is also to include a list of identifiable components, equipment, and other identifiable property involved. Also, the status of manufacture, procurement, or installation of such property is to be indicated. Separate descriptions are to be furnished for design and production work. Items of identifiable raw materials, purchased parts, components and other identifiable hardware, which are made excess by the change and which are not to be retained by the Contractor, are to be listed for later disposition;
- H.7.2.3.** [RFP] Description of work necessary to undo work already completed which has been deleted by the change;
- H.7.2.4.** [RFP] Description of work which is substituted or added by the change. A list of identifiable components and equipment (not bulk materials or items) involved, should be included. Separate descriptions are to be furnished for design work and productions work;
- H.7.2.5.** [RFP] Description of interference and inefficiencies in performing the change;
- H.7.2.6.** [RFP] Description of disruption attributable solely to the change; which description shall include the following information:
- H.7.2.6.1.** [RFP] Description of each identifiable element of disruption and how work has been, or may be, disrupted;
- H.7.2.6.2.** [RFP] The calendar period of time during which disruption occurred, or may occur;

- H.7.2.6.3.** [RFP] Area(s) of the Contractor's operations where disruption occurred, or may occur;
- H.7.2.6.4.** [RFP] Trade(s) or functions disrupted, with a breakdown of man hours and materials for each trade or function;
- H.7.2.6.5.** [RFP] Scheduling of trades before, during, and after the period of disruption insofar as such scheduling may relate to or be affected by the estimated disruption;
- H.7.2.6.6.** [RFP] Description of any measures taken to lessen the disruptive effect of the change;
- H.7.2.7.** [RFP] Delay in delivery attributable solely to the change;
- H.7.2.8.** [RFP] Other work or increased costs attributable to the change;
- H.7.2.9.** [RFP] Supplementing the foregoing, a narrative statement of the "causal" relationship between the alleged Government act or omission and the claimed consequences therefore, cross-referenced to the detailed information provided as required above;
- H.7.2.10.** [RFP] Each proposal submitted in accordance with the clause shall include a copy of the Contractor's cutter's labor budget at the cost class level in effect as of the date the event began, the cost incurred at the cost level as of the same date, and the proposed effect of the change at the cost class level;
- H.7.2.11.** [RFP] It is recognized that individual claims for equitable adjustment may not include all of the factors listed in subparagraphs H.7.2.1 through H.7.2.10 above, or that the Contractor may not be reasonably able to furnish all of the factors listed in subparagraphs H.7.2.1 through H.7.2.10 above. Accordingly, the Contractor is only required to set forth in his proposal, information with respect to those factors which are relevant in the individual claims for equitable adjustment, or which he is reasonably able to furnish.
- H.7.3.** [RFP] In addition to any information required under paragraph H.7.2 above, each proposal submitted in support of a claim for equitable adjustment, under any clause of this contract, of \$100,000 or more, shall follow the instructions of [FAR clause 52.215-21](#) and shall contain sufficient detail to permit the Contracting Officer to cross-reference the claimed increased costs, or delay in delivery, or both, as appropriate, with the information submitted pursuant to subparagraphs (b)(1) through (b)(10) hereof.

H.8 [RFP] ECONOMIC PRICE ADJUSTMENT

H.8.1. [RFP] General.

- H.8.1.1.** [RFP] The contract prices agreed to by the parties reflect the price levels of the base periods identified in paragraph H.8.4 below. It is anticipated that the contractor's actual costs may vary from the price levels of the base periods and the parties desire to provide for adjustment to reflect such variations. However, regardless of the actual variations in the cost experienced during the period of performance with the procedures specified herein.
- H.8.1.2.** [RFP] If exercised, optional cutter construction sub-CLINs and the optional Insurance Spares CLIN, excluding profit components, are subject to economic price adjustment.

H.8.1.3. [RFP] For the purpose of this clause, “Post Delivery Date” is defined as a date three months after the contractual delivery date of the CLIN/sub-CLIN as set forth in Section F clause entitled “[Time of Delivery](#)”. Also, for the purpose of this clause, a “monthly period” or “monthly period involved” shall mean the Contractor’s normal accounting month.

H.8.2. [A005] *Pricing of Changes*. The costs subject to adjustment under this clause include the costs of performance of changes or other work for which the contract price is subject to equitable adjustment pursuant to the “Changes” clause, or pursuant to other provisions of the contract. Accordingly, equitable adjustments to the contract price for the CLINs/subCLINs subject to economic price adjustment shall be determined on the basis of actual and/or projected direct material costs, direct labor costs, and indirect costs, de-escalated to price levels of the base periods identified in Paragraph H.8.4 below. The method of de-escalation shall be the same as that set forth in Paragraph H.8.5 below for determining economic price adjustments.

H.8.3. [RFP] Costs Subject to Economic Price Adjustment.

H.8.3.1. [A014] The intent of this clause is to provide for the monthly determination of economic price adjustments for construction of each option CLIN/sub-CLIN, on an individual CLIN/sub-CLIN basis. For payment, these monthly costs shall be submitted on a quarterly basis, as described elsewhere in this clause, for development of a Supplemental Agreement. Upon execution of the Supplemental Agreement stating the amount of the economic price adjustment, the Contractor may submit an invoice for the amount (if positive OR negative), subject to the provisions of this clause. Furthermore, it is the intent of this clause to end economic price adjustment in the monthly period in which the Post Delivery Date occurs, or when the cumulative sum of the costs for the CLIN/sub-CLIN reaches the price set forth in the contract (procedures defined below), whichever occurs first. However, economic price adjustment for Vessel Warranty SubClins will end 12 months after the Post Delivery date of the applicable vessel and economic price adjustment for all Optional Vessel Training SubClins will end upon Preliminary Acceptance of each respective vessel.

H.8.3.2. [RFP] For the purpose of this clause, the total allowable costs in the following categories shall be subject to economic price adjustment:

H.8.3.2.1. [RFP] Select employee benefits:

- a. FICA (indirect costs).
- b. State and Federal Workmen's Compensation (indirect costs).
- c. Unemployment Compensation (indirect costs).
- d. Disability (indirect costs).
- e. Federally Mandated National Health Program (indirect costs).
- f. Federally Mandated changes to hours of work per week or per day and changes to the payment of overtime (indirect and direct costs).

H.8.3.2.2. [RFP] One hundred percent of the imputed cost of facilities capital (indirect cost).

H.8.3.2.3. [RFP] One hundred percent of direct labor costs.

- H.8.3.2.4.** [RFP] One hundred percent of direct material costs.
- H.8.3.2.5.** [RFP] Ninety-five percent of indirect costs other than indirect costs in H.8.3.2.1, and H.8.3.2.2 above.
- H.8.3.3.** [RFP] Within 30 days after the end of each quarterly period with respect to the CLIN(s)/subCLIN(s) within each CLIN, the Contractor shall submit to the Government: (i) a certified statement of the costs incurred for the CLIN(s)/subCLIN(s) within the CLINs during the three months (monthly costs) comprising the quarterly period, and (ii) a certified statement of the total cumulative costs incurred for the CLIN(s)/subCLIN(s) within the CLINs from the effective date of the contract to the end of that quarterly period (total costs). The quarterly statement shall separately identify the direct material costs, the direct labor costs, and the indirect costs for each month, and as a quarterly total. With respect to indirect costs, the statement of monthly costs shall state separately from all other indirect costs (i) the monthly incurred selected employee benefit costs of the type identified in subparagraph H.8.3.2.1 above, (ii) the monthly imputed cost of facilities capital allocated to the CLIN/subCLIN, and (iii) the ninety-five percent of indirect costs subject to economic price adjustment. Periodic recomputation of indices may be necessary for instances as described in subparagraphs H.8.4.3 and H.8.4.4. In such cases when the applicable index for the monthly period involved has been made available or revised, the economic price adjustment for that monthly period shall be recomputed on the basis of the more recent BLS index, if different from the index previously used by the contractor. The contractor shall be required annually (April) to review the most recent Bureau of Labor Statistics (BLS) indices available and consolidate any such Economic Price Adjustment revisions. Any additional payment to or repayment by the Contractor required by the net amount of such recomputations for the period shall be reflected annually along with the Economic Price Adjustment computations submitted each April. The period for which the recomputations shall be applied is defined as the effective date of the contract to the end of the most recent month for which applicable BLS indices are available at the time of the annual review. There shall be a final recomputation submitted after the conclusion of the warranty period to adjust all revised BLS indices. The period for the final recomputation shall cover the effective date of the contract to the end of the warranty period. Submission of the final recomputation should occur within one month of the date for which applicable BLS indices covering the entire warranty period are made available to the contractor. There shall be no Economic Price Adjustment allowed, nor any revisions to Economic Price Adjustment allowed for any purpose beyond the Post Delivery Period.
- H.8.3.4.** [RFP] The monthly selected employee benefit costs for the CLIN/subCLIN shall be the product obtained by multiplying the yard-wide total selected employee benefit costs of the type identified in subparagraph H.8.3.2.1 above by the amount of total overhead dollars, excluding the imputed cost of facilities capital, allocated to the CLIN/subCLIN for the monthly period involved and the product shall be divided by yard-wide total overhead dollars, excluding the imputed cost of facilities capital, for the monthly period involved.
- H.8.3.5.** [RFP] For the purpose of this clause:

- H.8.3.5.1.** [RFP] "Direct material costs," "direct labor costs," and "indirect costs" shall have the meaning set forth in [FAR Part 31](#) in effect on the effective date of this contract.
- H.8.3.5.2.** [RFP] "Monthly costs," and "total costs" shall include only "incurred costs" and "allowable costs" which shall also have the meaning set forth in [FAR Part 31](#) in effect on the effective date of this contract, except that "incurred costs" for material shall include the full amounts of all billings received from vendors during the monthly period involved irrespective of whether the Contractor has paid the full amount of such billings. Further, on this contract, the imputed cost of facilities capital shall be treated as an "incurred indirect cost."
- H.8.3.6.** [RFP] The costs identified in this paragraph c shall be subject to audit and inspection by the Contracting Officer.
- H.8.4.** [RFP] Cost indices.
- H.8.4.1.** [A005] Economic Price Adjustment under Paragraph H.8.5 below for selected employee benefits, imputed cost of facilities capital, 95 percent of indirect costs (other than indirect costs in subparagraph H.8.3.2.1, and H.8.3.2.2 above), and direct labor costs, shall be based on changes in the BLS Index "Labor Index of Straight-Time Average Hourly Earnings for Selected Shipyards for Steel Vessel Construction - All regions (Base: May 1987 = 100)".
- H.8.4.2.** [A005] Economic Price Adjustment under Paragraph H.8.5 below for direct material costs shall be based on the changes in the BLS Index "Material Index for Steel Vessel Contracts (Base: 1982 = 100)".
- H.8.4.3.** [RFP] In the event that any of the specified indices for the monthly period involved are unavailable to the Contractor at the close of a quarterly period, economic price adjustments pursuant to this clause shall be based upon the average monthly changes in the applicable indices for the previous four (4) months for which indices are available. The average of changes so calculated shall be added to the applicable index for the immediately preceding monthly period and the sum shall constitute the index for the monthly period involved. When the applicable index for the monthly period involved has been made available, the economic price adjustment for that monthly period shall be recomputed on the basis of such index in accordance with subparagraph H.8.3.3.
- H.8.4.4.** [RFP] In the event that any of the specified indices for any base period or any monthly period differs from the index previously available for that period, the economic price adjustment for the applicable monthly period(s) shall be recomputed on the basis of such revised index and any additional payment to or repayment by the Contractor required by such recomputation for that monthly period(s) shall be accomplished in accordance with subparagraph H.8.3.3.
- H.8.4.5.** [RFP] The Contractor shall be responsible for the calculations involving indices provided for in this paragraph, and said calculations shall be subject to verification and audit by the Government.
- H.8.4.6.** [RFP] For the purpose of computing economic price adjustments under this clause, the base period index values (subject to adjustment as specified in subparagraph H.8.4.4 above) are those final published values for May 2008.

- H.8.4.7.** [RFP] In the event that the Bureau of Labor Statistics discontinues determining the index cited herein, the Producer's Price Index as published in the Wall Street Journal shall become the substitute for the discontinued index.
- H.8.4.8.** [RFP] In the event that the Bureau of Labor Statistics alters its methods of calculating the index cited herein (including a change in the base period), appropriate adjustments in the affected index shall be agreed upon by the parties, to put it on a comparable basis with the index as calculated before the change.
- H.8.4.9.** [RFP] In the event that the Bureau of Labor Statistics changes its method of publication of the index cited herein, but does not change its method of computing the index, the contracting officer will notify the contractor of the revised method of publication. A change in agency responsibility for this index shall be considered to be a change in method of publication, and not a change in the method of computation.
- H.8.5.** [RFP] Computation of Economic Price Adjustment.
- H.8.5.1.** [A005] For the purpose of computing economic price adjustments under this clause, the following computations shall be used for all the categories of cost specified in subparagraph H.8.3.2. For each monthly period commencing prior to the Post Delivery Date of the CLIN/subCLIN, the amount of the applicable category of cost for the CLIN/subCLIN certified on the quarterly statement of monthly costs for that monthly period shall be multiplied by the difference between the value of the applicable index for that monthly period and the applicable base period index described in subparagraph H.8.4.6 above, and the product thereof shall be divided by the value of the applicable index for the base period and the result, the economic price adjustment for the applicable category of cost, shall be expressed to the nearest dollar. The calculation is as follows:
- $$\frac{\begin{array}{l} \text{(Current} \\ \text{(Month} \\ \text{(Index} \end{array} - \begin{array}{l} \text{Base} \\ \text{Period)} \\ \text{Index)} \end{array}}{\text{Base Period Index}} \times \begin{array}{l} \text{Current} \\ \text{Month} \\ \text{Cost} \end{array} = \text{Economic Price Adjustment}$$
- H.8.5.2.** [RFP] For any monthly period commencing subsequent to the Post Delivery Date of the CLIN/subCLIN, there shall be no economic price adjustment. In the event and to the extent that the contract delivery date for the CLIN/subCLIN is subsequently extended by contract modification, the Post Delivery Date for the CLIN/subCLIN shall be extended on a day-for-day basis. The Contractor shall submit such documentation necessary, in the same format as described herein, to be compensated for such extension of the CLIN/subCLIN contract delivery date.
- H.8.5.3.** [RFP] For each monthly period commencing prior to the contractual delivery date of the CLIN/subCLIN, the economic price adjustments computed above for all categories of allowable cost for the CLIN/subCLIN shall be totaled and subtracted from the Total Monthly Cost for the CLIN/subCLIN, and the resulting difference shall constitute the Base Cost for the CLIN/subCLIN for that monthly period. No adjustment for economic price adjustment under this clause shall be made in the event that the cumulative sum of the "Base Costs" of the CLIN/subCLIN for all preceding monthly periods exceeds the price set forth in the contract; provided, further, that in the event the contract price thereafter is

increased by modification to this contract, adjustment for economic price adjustment under this clause shall be made for each monthly period that the cumulative sum of the Base Costs for the vessel for all preceding monthly periods does not exceed such increased contract price.

- H.8.5.4.** [RFP] No adjustment for economic price adjustment under this clause shall be made for any monthly period for any CLIN/subCLIN in the event that the specified indices for the monthly period involved are unavailable solely as a result of the failure by the Contractor to submit timely, accurate, and complete information to the BLS necessary for their calculation of the indices. Any amount withheld under the provisions of this paragraph shall be released following the Contractor's submission of such information.
- H.8.5.5.** [RFP] The amount of adjustment in compensation for the CLIN/subCLIN determined as above (plus or minus) shall be set forth separately in a Supplemental Agreement to this contract, which also shall set forth the computation upon which each adjustment in compensation is based. The separate CLIN(s) established in the contract are for purposes of recording the initial and subsequent Supplemental Agreements. The Government also reserves the right to obligate advance amounts for payment of economic price adjustments, without regard to the cumulative sum of previous Supplemental Agreements, in order to satisfy budgetary constraints.
- H.8.5.6.** [A005] In the event that any amount shown in any Supplemental Agreement pursuant to Paragraph H.8.5.1 in respect to the CLIN/subCLIN is a minus figure, such amount shall be reflected as a negative invoice, accompanied by a check payable to the United States Treasury in an amount equal to the negative invoice.
- H.8.6.** [RFP] Payment of Economic Price Adjustment.
- H.8.6.1.** [A005] Payments of amounts of economic price adjustment under this clause shall be made for the CLIN/subCLIN on the basis of monthly periods submitted by quarters. After execution of the Supplemental Agreement pursuant to paragraph H.8.5.1 of this clause in respect of a quarterly period, and upon submission of a proper invoice, the Contractor shall be paid or there shall be deducted for the CLIN/subCLIN the amount set forth in such Supplemental Agreement, subject to the limitations contained in paragraph H.8.6.2, and/or elsewhere in this contract.
- H.8.6.2.** [RFP] Payments under this clause shall be 100 percent of the amount stated in the Supplemental Agreement determined above. After the close of the monthly period during which the CLIN/subCLIN is actually delivered, any remaining deferred payments for economic price adjustment shall, upon submission of proper invoices by the Contractor and upon verification thereof by the Contracting Officer, be promptly paid.
- H.8.7.** [RFP] To facilitate budgeting forecasts the Contractor shall, 15 days after the end of each monthly period, separately submit draft computations for the economic price adjustment for that monthly period. These draft computations are not binding, nor need to be recalculated as described elsewhere in this clause, and shall only be used for the purpose described in this paragraph H.8.7.
- H.8.8.** [RFP] Any dispute arising under this clause shall be determined in accordance with and subject to the requirement of the Section I clause entitled "DISPUTES".

H.9 [RFP] EQUITABLE ADJUSTMENTS: WAIVER AND RELEASE OF CLAIMS

- H.9.1.** [RFP] Whenever the Contractor, after receipt of a change made pursuant to the Section I clause entitled "Changes--Fixed-Price", submits any claim for equitable adjustment, such claim shall include all types of adjustments in the total amounts to which the contract entitles the Contractor, including but not limited to adjustments arising out of delays or disruptions or both caused by such change.
- H.9.2.** [RFP] Further, the Contractor agrees (except as the parties may otherwise agree) that, if required by the Contracting Officer, he will execute a release, in form and substance satisfactory to the Contracting Officer, as part of the supplemental agreement setting forth the aforesaid equitable adjustment, and that such release shall discharge the Government, its officers, agents and employees, from any further claims including but not limited to further claims arising out of delays or disruptions or both, caused by the aforesaid change.

H.10 [A011] EXERCISE OF OPTIONS (EXTENSION OF TERM OF THE CONTRACT)

- H.10.1.** [A011] The Government may, within the constraints specified within this clause, exercise any of the optional contract line items at the prices set forth in [Section B](#) of this contract.
- H.10.2.** [A011] Reserved.
- H.10.3.** [A011] It is the Government's intent to exercise an option for either four Fast Response Cutters **OR** six Fast Response Cutters during a specified option period, **but not both**.
- H.10.4.** [A011] Option Periods must be exercised sequentially (i.e. Option period One must be exercised before any other Option Period is exercised, Option Period Two must be exercised before Option Period Three, Option Period Three must be exercised before Option Period Four, etc.) In order to exercise a ship construction CLIN, the Government must have exercised a ship construction CLIN in the preceding option period.
- H.10.5.** [A011] CLINs 0012, 0016, 0020, 0024, 0028 may be exercised up to three times during each option period. No other CLIN maybe exercised more than once. CLINs will not be exercised without related Sub-CLINs; Sub- CLINs will not be exercised in the absence of the related CLIN, with two exceptions – Training, and the Optional Builder's Risk Insurance sub-CLIN for each cutter may remain unexercised even if the respective cutter construction CLIN and associated sub-CLINs are exercised.
- H.10.6.** [A011] Should the government decide to exercise an option, written notice of intent will be provided by the Contracting Officer to the Contractor within the option periods identified in the [Section B](#).
- H.10.7.** [A011] The exercise of any option is the unilateral right of the Government, and shall be via contract modification executed by the Contracting Officer in accordance with [FAR 52.217-7](#), incorporated by reference into this contract in Section I, and the schedule set forth in [Section B](#).

H.11 [RFP] FINAL SETTLEMENT

- H.11.1.** [RFP] Upon final acceptance of the cutter, or in the event of the termination of this contract on such terms that the cutter is not to be completed, then upon such termination, the Contractor shall be entitled to receive the balance owing to it under

this contract, such payment to be made promptly after the amount of such balance shall have been determined. The Contractor and each assignee under an assignment in effect at the time of final settlement shall execute and deliver at the time of and as a condition precedent to final payment, a release in form and substance satisfactory to and containing such exemptions as may be found appropriate by the Contracting Officer, discharging the Government, its officers, agents and employees of and from liabilities, obligations and claims arising under this contract. The Contracting Officer may authorize partial payments on account of any such balance to be made in advance of final settlement. If this contract shall have been terminated in whole or in part, any such release shall also contain a release of all claims against the Government arising out of or by virtue of such termination.

H.12 [RFP] GOVERNMENT FURNISHED INFORMATION AVAILABILITY

- H.12.1.** [RFP] All the data or information which the government has provided or will provide to the Contractor is set forth in Section J, [Attachment 6](#).
- H.12.2.** [RFP] The Contractor shall submit to the Contracting Officer a GFI Deficiency Report, for GFI listed in [Attachment 6](#), within ten (10) days of:
- H.12.2.1.** [RFP] Initial receipt, inspection and discovery of any patent defect or other significant problem which renders any item of data unsuitable for use.
- H.12.2.2.** [RFP] Discovery that the data contained latent defects that may have existed at the time of delivery but could not reasonably have been discovered until the actual attempted use of the data.
- H.12.2.3.** [RFP] The end of the month in which data was scheduled for delivery but has not been received.
- H.12.3.** [RFP] The Contracting Officer may at any time by written order:
- H.12.3.1.** [RFP] Delete, supersede, or revise, in whole or in part, data listed or specifically referenced in [Attachment 6](#); or
- H.12.3.2.** [RFP] Add items of data or information to [Attachment 6](#); or
- H.12.3.3.** [RFP] Revise due dates for items of data or information referenced in [Attachment 6](#).
- H.12.4.** [RFP] If either (1) any action taken by the Contracting Officer pursuant to paragraph H.12.3 of this clause, or (2) any such deficiency as reported pursuant to paragraph H.12.2 of this clause causes an increase or decrease in the costs of or the time required for performance of any part of the work under this contract, any equitable adjustment shall be made in the contract price and delivery schedule in accordance with the procedures provided for in the clause of this contract entitled "Changes".
- H.12.5.** [RFP] The provisions of this clause state the sole and exclusive liability of the Government to the Contractor for adjustment of the contract price and/or delivery schedule for performance of any part of the work under this contract incident to, arising out of, or resulting from Government Furnished Information, and the Government shall not be liable to suit for breach of contract on account thereof.

H.13 [RFP] GOVERNMENT FURNISHED INFORMATION AND PROPERTY

- H.13.1.** [RFP] The Government will provide only that information and property set forth in Section J, Attachment 6 and Attachment 7, notwithstanding any term or condition of the specification(s) to the contrary. All property provided to the Contractor by the Government under this contract shall be subject to FAR clause [52.245-2](#), "Government Property (Fixed Price Contracts)" incorporated by reference into Section I.
- H.13.2.** [RFP] As used in FAR clause [52.245-2](#), the term "Government property provided under this contract" shall mean all Government Furnished Property or property acquired by the Contractor under the terms of this contract.

H.14 [RFP] HISTORICALLY BLACK COLLEGES AND UNIVERSITIES

- H.14.1.** [RFP] The Historically Black Colleges and Universities (HBCU) listing which may be found on the Internet at the following URL:

<http://www.ed.gov/about/inits/list/whhbcu/edlite-list.html>

- H.14.2.** [RFP] This site is provided to assist you in identifying subcontractors. As part of the Coast Guard's initiative to provide increased opportunities for HBCUs to participate in, and benefit from, Federal programs, we encourage you to use this listing.

H.15 [RFP] INCORPORATION OF SECTION K BY REFERENCE

- H.15.1.** [RFP] In accordance with [FAR 15.406-1\(b\)](#), Part IV of the Uniform Contract Format shall not be physically included in the contract, but [Section K](#), Representations, Certifications, and Other Statements of Offerors (as completed by the Contractor) shall be incorporated by reference in the contract.

H.16 [A014] LIABILITY AND INSURANCE

- H.16.1.** [A014] The Contractor shall exercise reasonable care and use their best efforts to prevent accidents, injury or damage to all employees, persons and property, on and about the work, and to the cutters(s) or parts thereof upon which work is done. Notwithstanding this clause, the Government does not assume any risk with respect to, and will not pay for any costs of the Contractor for the inspection, repair, replacement, or renewal of any defects in the cutter(s) or such materials and equipment for which the Contractor is responsible, in accordance with the clauses of the contract concerning quality assurance, warranty or inspection.
- H.16.2.** [A014] All policies under this Clause shall be delivered to the Contracting Officer for their approval and custody. The terms of the policies, the insurance companies and the underwriters shall at all times be satisfactory to the Contracting Officer. Policies not in conformance herewith shall be surrendered and cancelled upon the direction of the Contracting Officer, and new policies procured in conformance herewith.
- H.16.3.** [A014] In the event that the Contractor shall procure or maintain other insurance than that provided in C.20, Builder's Risk Insurance, upon any materials or other property upon which a lien exists in favor of the Government or to which the Government has title pursuant to the terms of this contract, the policy or policies shall contain a losses payable clause making losses payable to the United States Coast Guard, or as referred to by the Contracting Officer. Any payments thereunder shall

inure to the benefit of the Government and to the Contractor as to any remaining balance.

- H.16.4.** [A014] The Contractor indemnifies and holds harmless the Government, its agencies and instrumentalities, against all suits, actions, claims, costs or demands, (including, without limitation, suits, actions, claims, costs or demands resulting from death, personal injury, and property damage) to which the Government, its agencies, instrumentalities, may be subject or put by reason of damage or injury (including death) to the property or person of any one other than the Government, its agencies, instrumentalities and personnel, arising or resulting in whole or in part from the fault, negligence, wrongful act or wrongful omission of the Contractor, or other subcontractor, or their servants, agents or employees; provided, that the Contractor's obligation to indemnify under this paragraph shall not exceed the sum of \$10,000,000.00 on account of any one accident or occurrence in respect of any one cutter. Such indemnity shall include, without limitation, suits, action, claims, costs or demands of any kind whatsoever resulting from death, personal injury or property damage occurring during the period of performance; and with respect to any such suits, actions, claims, costs, or demands resulting from death, personal injury or property damage occurring after the expiration of such period, the rights and liabilities of the Government and the Contractor shall be as determined by other provisions of this contract and by law; provided, however, that such indemnity shall apply to death occurring after such period which results from any personal injury received during the period covered by the Contractor's indemnity as provided herein.
- H.16.5.** [A014] The Contractor shall procure, and thereafter maintain such casualty, accident and liability insurance, in such forms and amounts as may be approved by the Contracting Officer, insuring the performance of their obligations under paragraph H.16.4 of this clause. Further, the Contractor shall procure and maintain in force Workman's Compensation Insurance (or its equivalent) covering their employees engaged on the work and shall insure the procurement and maintenance of such insurance by all subcontractor's engaged on the work. The Contractor shall provide such evidence of such insurance as may be, from time to time, required by the Government. All such insurance which is or may be required or approved pursuant to this clause shall be in such form, in such amounts, for such periods of time, and with such insurers as the Contracting Officer may from time to time require or approve, provided the Contractor shall be named as an insured and shall be entitled to pay of any loss or damage as its interest may appear; further provided the Government shall be named as an additional insured and shall be entitled to payment of any loss of damage as its interests may appear.
- H.16.6.** [A014] No allowance shall be made to the Contractor in the contract price for the inclusion of any premium expense or charge for any reserve made on account of self insurance for coverage against any risk assumed by the Government under this clause. The cost of the insurance required by this contract, Builder's Risk and casualty, accident and liability insurance, is included in the price, and the cost of all other insurance which may be required or approved pursuant to this clause will be considered allowable costs under this contract. If the Contracting Officer should require or approve the cancellation of any such insurance, the Contractor will promptly pay to the Government the amount of all unearned premiums refunded to the Contractor, but only to the extent that such premiums shall have been reimbursed to the Contractor by the Government or included in the contract price.

- H.16.7.** [A014] As soon as practicable after the occurrence of any loss or damage, the risk of which the Government has assumed, written notice of such loss or damage shall be given by the Contractor to the Contracting Officer. This notice shall contain full particulars of such loss or damage. If claim is made or suit is brought thereafter against the Contractor as a result or because of such event, the Contractor shall immediately deliver to the Government every demand, notice, summons or other process received by themselves or their representatives. The Contractor shall cooperate with the Government in responding to any claim or suit, and, upon the Government's request, shall assist in effecting settlements, securing and giving evidence, obtaining the attendance of witnesses and any other related support requested by the Government;; and the Government shall pay to the Contractor the expense, other than the cost of maintaining the Contractor's usual organization, incurred in so doing. The Contractor shall not, except at its own cost, voluntarily make any payment, assume any obligation, or incur any expense other than shall be imperative for the protection of the cutter(s) at the time of said occurrence of such event.
- H.16.8.** [A014] In the event of loss or damage to any of the cutters or any of the materials or equipment therefore which may result in a claim against the Government under the insurance provisions of this contract, the Contractor promptly shall notify the Contracting Officer of such loss or damages, and the Contracting Officer may, without prejudice to any of the rights of the government, either:
- H.16.8.1.** [A014] Order the Contractor to proceed with replacement or repair in which event the Contractor shall effect such replacement or repair. The Contractor shall submit to the Contracting Officer a request for the cost of such replacement or repair together with such supporting documentation as the Contracting Officer may reasonably require, and shall identify such requests as being submitted under the "Insurance" clause of this contract. If the Government determines that the risk of such loss or damage is within the scope of the risks assumed by the Government under this clause, the Government will reimburse the Contractor for the reasonable, allowable cost of such replacement or repair, plus a reasonable profit (if the work of replacement or repair was performed by the Contractor) less the amount of deductible as specified in paragraph [C.20.2](#) of this contract. Payments by the government to the contractor under this Insurance clause are within the scope of the contract and this clause, but shall not affect the pricing structure of the contract, and are additional to the compensation otherwise payable to the Contractor under this contract; or
- H.16.8.2.** [A014] In the event the Contracting Officer decides that the loss or damage shall not be replaced or repaired,
- H.16.8.2.1.** [A014] Either modify the contract appropriately consistent with the reduced requirements reflected by the unreplaced or unrepaired loss or damage, or
- H.16.8.2.2.** [A014] Terminate under the Section I clause of this contract entitled "[Termination for Convenience of the Government \(Fixed Price\)](#)."

H.17 [RFP] LIENS AND TITLE

- H.17.1.** [RFP] Any and all payments made hereunder on account of the cutters and the materials and equipment therefore shall be secured, when made, by a lien in favor of the Government upon such material and equipment on account of all payments so made, except to the extent that the Government, by virtue of any other provision of

this contract, or otherwise, shall have valid title to such material and equipment as against other creditors of the Contractor. If such property is not identified by marking or segregating the Government shall be deemed to have a lien upon a proportionate part of any mass of property with which such property is commingled. Any lien provided for by virtue of this clause is paramount to all other liens. Upon completion and delivery of the cutters, said lien shall be discharged as to any materials and equipment which have not been included in the cutter and which are no longer required therefore.

- H.17.2.** [RFP] Title to the cutters under construction shall be vested in the Government and title to all materials and equipment acquired for each cutter shall vest in the Government upon delivery thereof to the plant of the Contractor, provided, that the Contracting Officer may, by written direction, require that title shall vest in the Government upon delivery of such materials and equipment to the carrier for transportation to the plant of the Contractor. The amount of any freight charges, transportation, taxes or other costs which would have been paid by the Contractor, either directly or as an element of any subcontract cost, and which the Contractor shall not be required to pay as a result of such earlier vesting of title and any use of Government bills of lading, shall be determined and treated as though resulting from a change order and the contract price reduced accordingly. Upon completion of the cutters, or with the approval of the Contracting Officer at any time during the construction/conversion of the cutters, all such materials and equipment which have not been included therein and which are agreed between the Contractor and the Contracting Officer to be no longer required therefore, except materials and equipment which were furnished by the Government or the cost of which has been reimbursed by the Government to the Contractor, shall become the property of the Contractor; provided, however, that models, mock-ups, plans and other items which the Contractor is expressly required to construct, prepare, or furnish shall remain the property of the Government. Upon completion of this contract, or at such earlier date as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of property not consumed in the performance of this contract (including any resulting scrap) or not theretofore delivered to the Government, the cost of which has been reimbursed by the Government to the Contractor apart from the fixed price. The Contractor shall deliver or make such other disposal of such property as may be directed or authorized by the Contracting Officer. Recoverable scrap from such property shall be reported in accordance with such procedure and in such form as the Contracting Officer may direct. The net proceeds of any such disposal shall be credited to the Government and shall be paid in such manner as the Contracting Officer may direct. For the purpose of this clause, "net proceeds" means actual amount collected from such sale of disposal less sales, collection fees and other reasonable related expenses.
- H.17.3.** [RFP] The rights and remedies provided in this clause are in addition to and do not limit any rights and remedies provided to the Government by law or by any other clause of this contract

H.18 [A013] Reserved.**H.19 [A013] PERFORMANCE AND PAYMENT BONDS**

- H.19.1.** [A013] No later than fourteen calendar days after contract award, the Contractor shall furnish to the Contracting Officer the following bonds for this contract:
- H.19.1.1.** [A013] Performance bond, in duplicate, using the current U. S. [Standard Form 25](#), in a penal amount of 20% of the total contract price excluding option items; and
 - H.19.1.2.** [A013] Payment bond, in duplicate, on [SF 1416](#), in a penal amount of \$1,500,000 or 20% of the total contract price excluding options, whichever is less.
- H.19.2.** [A013] For Low Rate Initial Production cutters, if the option is exercised, the Contractor, shall furnish to the Contracting Officer bonds listed in H.19.1.1. and H.19.1.2 no later than 14 days after the start of the option period. The bonds furnished for this option period shall be in compliance with H.19.1.1 and H.19.1.2 except that it shall be in a penal amount of 20% of the LRIP option price for the Performance Bonds and in a penal amount of \$1,500,000 or 20% of the LRIP option price for the Payment Bonds, whichever is less.
- H.19.3.** [A013] If the Contractor is already covered by an annual performance bond, proof of such adequate coverage must be provided with the Contractor's proposal. For the base contract period, the Performance Bond shall cover contract line items (CLINS) 0001 - 0007 only (total contract price for base period) and for the LRIP option period, if exercised, the Performance Bond shall cover CLINS 0008A through 0008F only (total price for Option Period One). Performance Bonds may be returned to the Contractor at the end of the warranty period for the respective hull(s) of which it covers. The Payment Bond shall be returned to the Contractor upon verification that all subcontractor payments associated with the covered CLINS (excluding subcontractor costs incurred under CLIN 0005 or CLIN 0008E) have been made.
- H.19.4.** [A013] The Government's remedy for Contractor's failure to comply with these bonding requirements is Termination for Default.
- H.19.5.** [A013] The Offeror shall use the current Performance Bond form ([SF 25](#)), Payment Bond form ([SF 1416](#)) and Affidavit of Individual Surety ([SF 28](#)).
- H.19.6.** [A013] The surety or sureties of such bonds shall be satisfactory to the Contracting Officer and shall be listed in [Department of Treasury Circular 570](#), "COMPANIES HOLDING CERTIFICATES OF AUTHORITY AS ACCEPTABLE SURETIES ON FEDERAL BONDS AND AS ACCEPTABLE REINSURING COMPANIES".

H.20 [RFP] POST AWARD CONFERENCE

- H.20.1.** [RFP] The Contractor shall host a Post Award Conference (PAC), which the Contracting Officer will chair, at the production facility within 30 days following contract award. The conference is expected to be approximately three days in duration and cover topics provided by the Contracting Officer. The Contractor may recommend additional topics but, at a minimum, topics are expected to include:
- H.20.1.1.** [RFP] A Post Award Debriefing, if requested in accordance with [FAR 15.506](#).
 - H.20.1.2.** [RFP] An introduction of key personnel by both the Government and the Contractor.

- H.20.1.3.** [RFP] A presentation and discussion led by the Contractor concerning the Contractor's Contract Work Breakdown Structure.
- H.20.1.4.** [RFP] A presentation and discussion led by the Contractor concerning the Contractor's Integrated Master Plan and Integrated Master Schedule.
- H.20.1.5.** [RFP] A presentation and discussion led by the Contractor concerning use of the Integrated Product Data Environment (IPDE) for CDRL deliverables and file sharing. IPDE access and protection should be included in the discussion.
- H.20.1.6.** [RFP] A discussion lead by the Contractor regarding the PRO and PCAF facilities.
- H.20.2.** [RFP] The Contracting Officer will provide a list of attendees. Coast Guard representation will likely include the Contracting Officer, Project Manager, Project Sponsor's Representative, Deputy Project Manager, Project Technical Director, Project Logistics Manager, and the Commanding Officer and senior staff of the Project Resident Office. Contractor personnel should include equivalent representation.
- H.20.3.** [RFP] The PAC is not a substitute for the Contractor's full understanding of the work requirements at the time offers are submitted. Furthermore, it shall not preclude the Coast Guard from identifying errors, omissions, and inconsistencies during contract performance.
- H.20.4.** [RFP] The Contractor shall be responsible for meeting agenda ([CDRL 042-002](#)) and minutes ([CDRL 042-003](#)) in accordance with [COR Section 042.9](#).
- H.21 [RFP] PREVENTION OF THE DISCHARGE OF OIL AND HAZARDOUS SUBSTANCES**
- H.21.1.** [RFP] It is the policy of the United States Coast Guard that the Coast Guard will conform to the provisions of the [Federal Water Pollution Control Act of 1972](#), as amended by the [Oil Pollution Act of 1990](#) and the [Act to Prevent Pollution from Ships](#), as amended, insofar as these Acts prohibit the discharge of oil, oily mixtures, and hazardous substances and regardless of whether or not the Act pertains specifically to cutter(s) and shore activities. The intent of this policy is to prohibit the discharge of all oil, oily mixtures and hazardous substances in all areas except when operational emergencies exist. The provisions of paragraphs H.21.2, H.21.3 and H.21.4, are intended to implement that policy with respect to the cutter(s) constructed under this contract.
- H.21.2.** [RFP] Prior to commencement of any dock or sea trials hereunder, the Contractor shall assure the Project Resident Office (PRO) by means of demonstrations, completed test memoranda, or other means designated by the PRO that (1) the equipments installed on the cutter(s), as required by the COR, which are necessary for the prevention of accidental discharges of oil, oily mixtures or hazardous substances from said cutters(s), are fully operable, and (2) the Contractor's personnel designated to operate said cutter(s) during such trials have been sufficiently trained in the operation of those equipments to eliminate all foreseeable risks of discharge of oil, oily mixtures or hazardous substances. For purposes of this Article, the terms "oil" and "discharge" shall have the meaning set forth in the [Water Quality Improvement Act of 1970](#) (Public Law 91-224, 84 Stat. 91).
- H.21.3.** [RFP] The Contractor shall, as soon as he has knowledge of any discharge of oil, oily mixtures or hazardous substances from the cutter(s) being constructed under

this contract, immediately notify the PRO thereof and shall immediately take all reasonable steps to prevent further discharge. Within twenty-four (24) hours thereafter, the Contractor shall file with the PRO an "Oil Discharge Report" set out in letter form stating the causes, damages, remedies taken to correct any damages and action being taken to prevent any further occurrences.

- H.21.4.** [RFP] Except where the Contractor can prove a discharge was caused solely by (1) an act of God, (2) an act of war, (3) fault or negligence of agents or employees of the Government, or (4) an act or omission of a third party without regard to whether any such act of omission was or was not negligent, or any combination of the foregoing causes, the Contractor shall be liable to the Government for the costs incurred for the removal of such discharge by the Government in an amount not to exceed five thousand dollars (\$5,000) for each such discharge; provided that, where such discharge was the result of willful negligence or willful misconduct within the privity and knowledge of the Contractor, the contractor shall be liable to the Government for all such costs or removal.

H.22 [RFP] PROHIBITION AGAINST FOREIGN SHIPYARDS

- H.22.1.** [RFP] In accordance with [14 USC 665](#), the cutter, including major components of the hull or superstructure, required by the contract may not be constructed in a foreign shipyard.

H.23 [RFP] QUARTERLY PRODUCTION PROGRESS CONFERENCES

- H.23.1.** [RFP] The Contractor shall conduct Quarterly Production Progress Conferences (QPPCs) to be held at the Contractor's facility.
- H.23.2.** [RFP] The initial meetings will begin three months after contract award and continue through delivery of the final cutter constructed under this contract. The duration of these meetings shall not exceed three days. The purpose of the meeting is for the Contractor to familiarize the Coast Guard with his design progress, to report engineering and production progress, anticipated delays, cost experience in relation to budget and projected end costs, ILS status, manning, schedules, receipt of Government-Furnished Property/ Contractor-Furnished Property, engineering and production problems, Contract Problem Identification Reports (CPIRs), Value Engineering Change Proposals (VECPs), Engineering Change Proposals (ECPs), and other related matters.
- H.23.3.** [RFP] The reports to be made by the Contractor pursuant to this clause are additional to, and not in substitution for reports and notices required to be made or given by the Contractor pursuant to other clauses of this contract, including, but not limited to, the "Notification of Changes" clause.
- H.23.4.** [RFP] The Contractor shall submit an agenda ([CDRL 042-002](#)) 10 working days before each scheduled QPPC incorporating status information and those specific issues or problems that will be discussed during the QPPC. Upon review of the agenda, the Government may recommend additions or deletions from the listed items.
- H.23.5.** [RFP] The Contractor shall submit minutes ([CDRL 042-003](#)) of the QPPC for review by the Contracting Officer within 10 working days following the QPPC. The Contracting Officer will respond to the Contractor making desired changes to or approval of the minutes within 10 working days of the QPPC.

H.24 [RFP] MAJOR SUBCONTRACTORS

H.24.1. [RFP] Major subcontractors, including any subcontractors performing a substantial portion of the effort, are essential to the work being performed under this contract. The major subcontractors listed below may not be changed without prior written consent from the Contracting Officer. The Contractor is responsible for providing justification for any change including any proposed substitute.

[List of applicable subcontractors to be filled in at contract award.]

H.25 [RFP] STANDARDIZATION

H.25.1. [RFP] Standardization of all cutters under this contract shall be in accordance with the requirements of this contract unless otherwise approved by the Coast Guard. All cutters constructed under this contract shall have machinery and equipment which is identical in every respect except as authorized in writing by the Contracting Officer. If the Contractor considers that strict compliance with this requirement is impracticable as to any individual item of machinery or equipment or any component thereof, the Contractor shall notify the Government and shall propose alternatives to the requirement so specified in accordance with Section H clause entitled "Configuration Management". Where the Contractor is permitted to deviate from the Contract requirement, the Government will determine the effect, if any, of such approved deviation on the contract price and the Contract shall be modified accordingly.

H.25.2. [RFP] The Contractor shall use sound procurement practices in furtherance of this standardization objective and shall include the substance of this clause and the specifications in subcontracts and purchase orders.

H.25.3. [RFP] While engaged in the efforts described above, the Contractor shall:

H.25.3.1. [RFP] Inform the Coast Guard if unable to arrange pricing agreements and indicate why; and

H.25.3.2. [RFP] Use best efforts to extend pricing agreements for other types of equipment to enhance standardization and supportability.

H.26 [RFP] TECHNICAL DATA EXCHANGE

H.26.1. [RFP] A library of technical data and calculations supporting the design shall be maintained by the Contractor as required in COR section [042-10](#). The library shall also contain any official correspondence not otherwise provided under the contract but relating to contract performance. The Government shall be allowed access to the library as specified in COR section [042-10](#).

H.27 [RFP] VERIFICATION AND VALIDATION

H.27.1. [RFP] The Government shall be allowed access to the Contractor's data records to the extent necessary to perform functions under [FAR 52.246-2](#) and [FAR 52.246-3](#) (incorporated by reference in Section [E.1](#)). Such access may include an independent validation contractor pursuant to FAR 52.246-2(h)(1). The continued coordination necessary, should the technical data be inadequate or incomplete, may result in a determination pursuant to [FAR Subpart 9.5](#) that the contractor is ineligible to compete for any subsequent production contract. No provision concerning Government remedies is to be construed as making such remedies exclusive or otherwise limiting remedies addressed elsewhere.

H.28 [RFP] WARRANTY

- H.28.1.** [RFP] The Contractor agrees that any commercial warranties for supplies, commercial components of supplies, or services granted by the original equipment manufacturer (OEM) shall be transferred to the USCG. The Contractor agrees that the supplies, commercial components of supplies and services furnished under this contract shall be covered by the most favorable warranties the OEM gives to any customer for such supplies and services and that the rights and remedies provided herein are in addition to and do not limit any rights and remedies provided to the Government by law or by any other clause of this contract.
- H.28.2.** [RFP] The twelve month warranty period for each cutter, prescribed in Section I clause [FAR 52.246-19](#) entitled "Warranty of Systems and Equipment under Performance Specifications or Design Criteria", shall be extended by the time during which such cutter is not available for unrestricted service by reason of any defects for which the Contracting Officer shall determine the Contractor to be responsible. During said period the cutter, after being fully equipped and in all respects complete and ready for service, may be finally tried by and at the expense of the Government under conditions prescribed by the Contracting Officer. The Contractor may, with approval of the Contracting Officer, have an engineer on board such cutter during said period. Such engineer shall have every reasonable opportunity to inspect the working of such cutter in all its parts but shall have no power to direct or control its operation.
- H.28.3.** [RFP] The Contractor shall establish and maintain a warranty item correction program to ensure that all Contractor responsible warranty defects are corrected in an expedient manner. Warranty Engineer(s) shall be provided as necessary to:
- H.28.3.1.** [RFP] Act as the principal point of contact between the Contractor and the cutter during the warranty period.
- H.28.3.2.** [RFP] Authorize and coordinate cutter visits by vendor representatives and accomplishment of industrial work locally to correct warranty defects.
- H.28.3.3.** [RFP] Conduct cutter visits as required to gain familiarity with scope and nature of the warranty defects and ensure satisfactory completion of such items.
- H.28.3.4.** [RFP] Conduct liaison with FRC-B Warranty Officer to ensure that corrective actions are satisfactory and signed-off by the FRC-B Warranty Officer.
- H.28.4.** [RFP] Whenever practicable, the Government will, in addition to giving the Contractor notice of any defect or nonconformance, afford the Contractor an opportunity to examine the defective supplies before they are replaced or corrected.
- H.28.5.** [RFP] The rights and remedies of the Government provided in this clause are in addition to and do not limit any rights otherwise afforded to the Government under this contract.

H.29 [RFP] HSAR 3052.245-70 GOVERNMENT PROPERTY REPORTS (JUN 2006)

- H.29.1.** [RFP] The Contractor shall prepare an annual report of Government property in its possession and the possession of its subcontractors. ([CDRL 000-004](#))
- H.29.2.** [RFP] The report shall be submitted to the Contracting Officer not later than September 15 of each calendar year on [DHS Form 0700-5](#), Contractor Report of Government Property.

H.30 [RFP] Reserved.**H.31 [RFP] ORDERING OF SUPPLIES AND SYSTEM STOCK**

H.31.1. [RFP] Supply Support. The Contracting Officer shall be the final approving authority for each item procured under all Supply Support sub-CLINs (00XXD) and will provide to the Contractor buy list(s) with quantities and a not-to-exceed price for each item. If the price/cost of an item exceeds the not-to-exceed price as provided in the buy list(s), the Contractor shall notify the Contracting Officer in writing for resolution. The Contractor shall not procure any item at a higher price than provided for in a buy list without prior written approval of the Government Contracting Officer.

H.31.2. [RFP] System Stock. The Contracting Officer shall be the final approving authority for each item procured under the System Stock CLIN 0012 and will provide to the Contractor a buy list with quantities, and a not-to-exceed price for each item. If the price/cost of an item exceeds the not-to-exceed price as provided in the buy list(s), the Contractor shall notify the Contracting Officer in writing for resolution. The Contractor shall not procure any item at a higher price than provided for in a buy list without prior written approval of the government Contracting Officer.

H.32 [RFP] COMMUNICATIONS WITH AMERICAN BUREAU OF SHIPPING (ABS)

H.32.1. [RFP] The contractor shall maintain a complete and up-to-date awareness of all matters related to classification, statutory certification or other compliance verification and shall communicate such information to the Coast Guard COTR. The contractor shall provide the Coast Guard with a copy of all correspondence and notes from verbal communications related to classification, statutory certification or other compliance verification for which ABS is responsible within 24 hours of its being promulgated and initially distributed. This is to include drawings and other engineering work requiring ABS approval as well as correspondence generated which relates to such approvals, including all such correspondence dealing with vendors.

H.33 [RFP] DEFINITION OF “DAYS”

H.33.1. [RFP] Unless otherwise stated, all references to “days” in this solicitation/contract and its associated attachments mean “calendar days.”

**Part II – Schedule
Section I – Contract Clauses**

I.1 [RFP] FAR 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

- I.1.1.** [A014] This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The Offeror is cautioned that the listed provisions may include blocks that must be completed by the Offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the Offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at these addresses:

<http://www.arnet.gov/far/>

Table I.1: FAR 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

Number	Title	Date
FAR 52.202-1	Definitions	JUL 2004
FAR 52.203-3	Gratuities	APR 1984
FAR 52.203-5	Covenant Against Contingent Fees	APR 1984
FAR 52.203-6	Restrictions On Subcontractor Sales To The Government	JUL 1995
FAR 52.203-7	Anti-Kickback Procedures	JUL 1995
FAR 52.203-8	Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity	JAN 1997
FAR 52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
FAR 52.203-12	Limitation On Payments To Influence Certain Federal Transactions	SEP 2005
FAR 52.204-4	Printed Or Copied Double-Sided On Recycled Paper	AUG 2000
FAR 52.204-7	Central Contractor Registration	JUL 2006
FAR 52.209-6	Protecting The Government's Interest When Subcontracting With Contractors Debarred, Suspended, Or Proposed For Debarment	JAN 2005
FAR 52.211-5	Material Requirements	AUG 2000
FAR 52.215-2	Audit And Records - Negotiation	JUN 1999
FAR 52.215-8	Order Of Precedence - Uniform Contract Format	OCT 1997

Number	Title	Date
FAR 52.215-11	Price Reduction For Defective Cost Or Pricing Data - Modifications	OCT 1997
FAR 52.215-13	Subcontractor Cost Or Pricing Data - Modifications	OCT 1997
FAR 52.215-14	Integrity Of Unit Prices	OCT 1997
FAR 52.215-15	Pension Adjustments And Asset Reversions	OCT 2004
FAR 52.215-18	Reversion Or Adjustment Of Plans For Postretirement Benefits (PRB) Other Than Pensions	JUL 2005
FAR 52.215-21	Requirements For Cost Or Pricing Data Or Information Other Than Cost Or Pricing Data - Modifications. (Oct 1997) - Alternate II	OCT 1997
FAR 52.219-4	Notice Of Price Evaluation Preference For HUBZone Small Business Concerns [] Offeror elects to waive the evaluation preference.	JUL 2005
FAR 52.219-8	Utilization Of Small Business Concerns	MAY 2004
FAR 52.219-9 Alternate II	Small Business Subcontracting Plan – Alternate II	OCT 2001
FAR 52.219-14	Limitations On Subcontracting	DEC 1996
FAR 52.219-16	Liquidated Damages – Subcontracting Plan	JAN 1999
FAR 52.219-23	Notice Of Price Evaluation Adjustment For Small Disadvantaged Business Concerns [] Offeror elects to waive the adjustment.	SEP 2005
FAR 52.222-20	Walsh-Healey Public Contracts Act	DEC 1996
FAR 52.222-21	Prohibition Of Segregated Facilities	FEB 1999
FAR 52.222-26	Equal Opportunity	APR 2002
FAR 52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans Of The Vietnam Era, And Other Eligible Veterans	DEC 2001
FAR 52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
FAR 52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, And Other Eligible Veterans	DEC 2001
FAR 52.223-3	Hazardous Material Identification And Material Safety Data (Jan 1997) – Alternate I	JUL 1995
FAR 52.223-6	Drug-Free Workplace	MAY 2001
FAR 52.223-14	Toxic Chemical Release Reporting	AUG 2003
FAR 52.225-1	Buy American Act – Supplies	JUN 2003
FAR 52.225-13	Restrictions On Certain Foreign Purchases	FEB 2006
FAR 52.227-1	Authorization And Consent	JUL 1995

Number	Title	Date
FAR 52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
FAR 52-227-14	Rights In Data – General (Jun 1987) – Alternate II	JUN 1987
FAR 52.227-16	Additional Data Requirements	JUN 1987
FAR 52.227-19	Commercial Computer Software—Restricted Rights	JUN 1987
FAR 52.227-21	Technical Data Declaration, Revision, And Withholding Of Payment – Major Systems	JAN 1997
FAR 52.227-22	Major System – Minimum Rights	JUN 1987
FAR 52.229-3	Federal, State, And Local Taxes	APR 2003
FAR 52.230-2	Cost Accounting Standards	APR 1998
FAR 52.230-6	Administration Of Cost Accounting Standards	APR 2005
FAR 52.232-1	Payments	APR 1984
FAR 52.232-8	Discounts For Prompt Payment	FEB 2002
FAR 52.232-9	Limitation On Withholding Of Payments	APR 1984
FAR 52.232-11	Extras	APR 1984
FAR 52.232-17	Interest	JUN 1996
FAR 52.232-16	Progress Payments	APR 2003
FAR 52.232-18	Availability Of Funds	APR 1984
FAR 52.232-23	Assignment Of Claims	JAN 1986
FAR 52.232-25	Prompt Payment	OCT 2003
FAR 52.232-33	Payment By Electronic Funds Transfer - Central Contractor Registration	OCT 2003
FAR 52.233-1	Disputes(Jul 2002) - Alternate I	DEC 1991
FAR 52.233-3	Protest After Award	AUG 1996
FAR 52.242-2	Production Progress Reports	APR 1991
FAR 52.242-13	Bankruptcy	JUL 1995
FAR 52.243-1	Changes - Fixed-Price	AUG 1987
FAR 52.243-2	Changes - Cost-Reimbursement	AUG 1987
FAR 52.243-6	Change Order Accounting	APR 1984
FAR 52.243-7	Notification Of Changes	APR 1984
FAR 52.244-2	Subcontracts	AUG 1998
FAR 52.244-5	Competition In Subcontracting	DEC 1996
FAR 52.244-6	Subcontracts For Commercial Items	FEB 2006
FAR 52.245-2	Government Property (Fixed-Price Contracts)	MAY 2004

Number	Title	Date
FAR 52.245-9	Use And Charges	AUG 2005
FAR 52.245-17	Special Tooling	MAY 2004
FAR 52.245-18	Special Test Equipment	FEB 1993
FAR 52.246-19	Warranty Of Systems And Equipment Under Performance Specifications Or Design Criteria (MAY 2001) Alternate III	APR 1984
FAR 52.246-23	Limitation Of Liability	FEB 1997
FAR 52.246-24	Limitation Of Liability - High-Value Items	FEB 1997
FAR 52.247-64	Preference For Privately Owned U.S.-Flag Commercial Vessels	FEB 2006
FAR 52.248-1	Value Engineering	FEB 2000
FAR 52.249-2	Termination For Convenience Of The Government (Fixed-Price)	MAY 2004
FAR 52.249-6	Termination (Cost-Reimbursement)	MAY 2004
FAR 52.249-8	Default (Fixed-Price Supply And Service)	APR 1984
FAR 52.249-14	Excusable Delays	APR 1984
FAR 52.251-1	Government Supply Sources	APR 1984
FAR 52.253-1	Computer Generated Forms	JAN 1991

I.2 [A013] Reserved.

I.3 [A013] [FAR 52.217-7](#) OPTION FOR INCREASED QUANTITY - SEPARATELY PRICED LINE ITEM (MAR 1989)

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within the option periods identified in the [Section B](#). Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

I.4 [RFP] [FAR 52.227-14](#) RIGHTS IN DATA - GENERAL (JUN 1987) - ALTERNATE II (JUN 1987) - FILL-IN

The clause is incorporated by reference, but the following is provided for the fill-in portion.

(a) These data are submitted with limited rights under Government Contract No. [to be inserted upon contract award] (and subcontract[], if appropriate). These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Contractor, be used for purposes of manufacture nor disclosed outside the Government; except that the Government may disclose these data outside the Government

for the following purposes, if any; provided that the Government makes such disclosure subject to prohibition against further use and disclosure:

- The operation, maintenance, diagnosis, and repair of the Fast Response Cutter system by the Coast Guard and support service contractors.
- The development of operations, maintenance, diagnosis, and repair documentation (traditional and electronic) in support of the FRC system by the Coast Guard and support service contractors.
- The training of operators, maintainers, diagnosticians, and repairers of the FRC system by the Coast Guard and support service contractors.
- The development of training materials (traditional and electronic) in support of the FRC system by the Coast Guard and support service contractors.

I.5 [A007] FAR 52.204-1 APPROVAL OF CONTRACT (DEC 1989)

This contract is subject to the written approval of the Chief, CG-9125, and shall not be binding until so approved.

I.6 [RFP] FAR 52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall -

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

(c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of [FAR 15.408\(k\)](#).

I.7 [RFP] FAR 52.222-39 NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES (DEC 2004)

(a) Definition. As used in this clause--

United States means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) Except as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).

Notice to Employees

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs.

Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board
Division of Information
1099 14th Street, N.W.
Washington, DC 20570
1-866-667-6572
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at <http://www.nlr.gov>.

(c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR part 470, and orders of the Secretary of Labor.

(d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR part 470, Subpart B--Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR part 470, which implements Executive Order 13201, or as are otherwise provided by law.

(e) The requirement to post the employee notice in paragraph (b) does not apply to--

- (1) Contractors and subcontractors that employ fewer than 15 persons;
 - (2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;
 - (3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;
 - (4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that--
 - (i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and
 - (ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or
 - (5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.
- (f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall--
- (1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605, Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;
 - (2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov>; or
 - (3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.
- (g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR part 470, Subpart B--Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

I.8 [RFP] FAR 52.223-11 OZONE-DEPLETING SUBSTANCES (MAY 2001)

(a) Definition. Ozone-depleting substance, as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR part 82 as--

- (1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or
- (2) Class II, including, but not limited to, hydro chlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

Warning

Contains (or manufactured with, if applicable) *_____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

* The Contractor shall insert the name of the substance(s).

I.9 [A013] HSAR 3052.209-72 ORGANIZATIONAL CONFLICT OF INTEREST (JUN 2006)

(a) Determination. The Government has determined that this effort may result in an actual or potential conflict of interest, or may provide one or more offerors with the potential to attain an unfair competitive advantage. The nature of the conflict of interest and the limitation on future contracting is as follows:

- (1) Any input into the analysis and/or definition of requirements, preparation of statements of work or specifications, access and/or input into government budgetary documents, etc., connected with all Fast Response Cutter (FRC) (or Maritime Coastal Patrol, as it is formerly known) acquisition projects under the Coast Guard's Deepwater Program.

(b) If any such conflict of interest is found to exist, the Contracting Officer may (1) disqualify the offeror, or (2) determine that it is otherwise in the best interest of the United States to contract with the offeror and include the appropriate provisions to avoid, neutralize, mitigate, or waive such conflict in the contract awarded. After discussion with the offeror, the Contracting Officer may determine that the actual conflict cannot be avoided, neutralized, mitigated or otherwise resolved to the satisfaction of the Government, and the offeror may be found ineligible for award.

(c) Disclosure: The offeror hereby represents, to the best of its knowledge that:

- ___ (1) It is not aware of any facts which create any actual or potential organizational conflicts of interest relating to the award of this contract, or
- ___ (2) It has included:

- (i) a mitigation plan in accordance with paragraph (d) of this provision and
- (ii) information in its proposal, providing all current information bearing on the existence of any actual or potential organizational conflicts of interest including: a copy of each contract Scope of Work (SOW); task order (TO), technical directive (TD), or task assignment (TA) performed or being performed by the offeror; and the Contracting Officer and government technical point of contacts, if applicable, (including his/her current email address, office symbol, and telephone number) for each. Each

shall be identified by Contract Number, followed by T/O, TD, and/or TA number, if applicable.

(d) Mitigation. If an offeror with a potential or actual conflict of interest or unfair competitive advantage believes the conflict can be avoided, neutralized, or mitigated, the offeror shall submit a mitigation plan to the Government for review. Award of a contract where an actual or potential conflict of interest exists shall not occur before Government approval of the mitigation plan. If a mitigation plan is approved, the restrictions of this provision do not apply to the extent defined in the mitigation plan.

(e) Other Relevant Information: In addition to the mitigation plan, the Contracting Officer may require further relevant information from the offeror. The Contracting Officer will use all information submitted by the offeror, and any other relevant information known to DHS, to determine whether an award to the offeror may take place, and whether the mitigation plan adequately neutralizes or mitigates the conflict.

(f) Corporation Change. The successful offeror shall inform the Contracting Officer within thirty (30) calendar days of the effective date of any corporate mergers, acquisitions, and/or divestures that may affect this provision.

(g) Flow-down. The contractor shall insert the substance of this clause in each first tier subcontract that exceeds the simplified acquisition threshold.

- 1.9.1.** [A013] Offerors are also encouraged to give attention FAR Subpart 9.5, Organizational and Consultants Conflicts of Interest, incorporated herein by reference.

Part IV – Representations and Instructions
Section K – Representations, Certifications and
Other Statements of Offerors

K.1 [RFP] FAR 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

- K.1.1.** [RFP] This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The Offeror is cautioned that the listed provisions may include blocks that must be completed by the Offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the Offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at these addresses:

<http://www.arnet.gov/far/>

Number	Title	Date
FAR 52.203-11	Certification And Disclosure Regarding Payments To Influence Certain Federal Transactions	SEP 2005

K.2 [RFP] FAR 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

- (a) The offeror certifies that -
- (1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to -
 - (i) Those prices;
 - (ii) The intention to submit an offer; or
 - (iii) The methods or factors used to calculate the prices offered.
 - (2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
 - (3) No attempt has been made or will be made by the Offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.
- (b) Each signature on the offer is considered to be a certification by the signatory that the signatory -

(1) Is the person in the Offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; or

(2)

(i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision [*insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization*];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) of this provision have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

K.3 [RFP] FAR 52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) *Definitions.*

Common parent, as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

Taxpayer Identification Number (TIN), as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) *Taxpayer Identification Number (TIN).*

- TIN: _____.
- TIN has been applied for.
- TIN is not required because:
- Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;
- Offeror is an agency or instrumentality of a foreign government;
- Offeror is an agency or instrumentality of the Federal Government.

(e) *Type of organization.*

- Sole proprietorship;
- Partnership;
- Corporate entity (not tax-exempt);
- Corporate entity (tax-exempt);
- Government entity (Federal, State, or local);
- Foreign government;
- International organization per 26 CFR 1.6049-4;
- Other _____.

(f) *Common parent.*

- Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.
- Name and TIN of common parent:

Name _____

TIN _____

K.4 [RFP] FAR 52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) *Definition.* "Women-owned business concern," as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) *Representation.* [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, *Small Business Program Representation, of this solicitation.*] The offeror represents that it is a women-owned business concern.

K.5 [RFP] FAR 52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2006)

(a)

- (1) The North American Industry Classification System (NAICS) code for this acquisition is *[insert NAICS code]*.
- (2) The small business size standard is *[insert size standard]*.
- (3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)

- (1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.
- (2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(i) Paragraph (c) applies.

(ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

- (c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov>. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below *[offeror to insert changes, identifying change by clause number, title, date]*. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

 FAR Clause Title Date Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

K.6 [RFP] FAR 52.207-4 ECONOMIC PURCHASE QUANTITY – SUPPLIES (AUG 1987)

(a) Offerors are invited to state an opinion on whether the quantity(ies) of supplies on which bids, proposals or quotes are requested in this solicitation is (are) economically advantageous to the Government.

(b) Each offeror who believes that acquisitions in different quantities would be more advantageous is invited to recommend an economic purchase quantity. If different quantities are recommended, a total and a unit price must be quoted for applicable items. An economic purchase quantity is that quantity at which a significant price break occurs. If there are significant price breaks at different quantity points, this information is desired as well.

Offeror Recommendations

Item	Quantity	Price Quotation	Total
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(c) The information requested in this provision is being solicited to avoid acquisitions in disadvantageous quantities and to assist the Government in developing a data base for future acquisitions of these items. However, the Government reserves the right to amend or cancel the solicitation and resolicit with respect to any individual item in the event quotations received and the Government's requirements indicate that different quantities should be acquired.

K.7 [RFP] FAR 52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)

(1) The Offeror certifies, to the best of its knowledge and belief, that -

(i) The Offeror and/or any of its Principals -

(A) Are [] are not [] presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have [] have not [], within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery,

falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror has has not , within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) Principals, for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

K.8 [RFP] FAR 52.215-6 PLACE OF PERFORMANCE (OCT 1997)

(a) The offeror or respondent, in the performance of any contract resulting from this solicitation, intends, does not intend [*check applicable block*] to use one or more plants or facilities located at a different address from the address of the offeror or respondent as indicated in this proposal or response to request for information.

(b) If the offeror or respondent checks intends in paragraph (a) of this provision, it shall insert in the following spaces the required information:

Place of Performance

Name and Address of Owner

(Street Address, City,
State, County, Zip Code)

and Operator of the Plant
or Facility if Other than
Offeror or Respondent

K.9 [RFP] FAR 52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 2004) ALTERNATE I (APR 2002)

(a)

(1) The North American Industry Classification System (NAICS) code for this acquisition is *[insert NAICS code]*.

(2) The small business size standard is *[insert size standard]*.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) *Representations.*

(1) The offeror represents as part of its offer that it ___ is, ___ is not a small business concern.

(2) *(Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.)* The offeror represents, for general statistical purposes, that it ___ is, ___ is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) *(Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.)* The offeror represents as part of its offer that it ___ is, ___ is not a women-owned small business concern.

(4) *(Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.)* The offeror represents as part of its offer that it ___ is, ___ is not a veteran-owned small business concern.

(5) *(Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.)* The offeror represents as part of its offer that it ___ is, ___ is not a service-disabled veteran-owned small business concern.

(6) *(Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.)* The offeror represents, as part of its offer, that-

(i) It ___ is, ___ is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ___ is, ___ is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) *(Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.)* The offeror shall check the category in which its ownership falls:

_____ Black American.

_____ Hispanic American.

_____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

_____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

_____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

_____ Individual/concern, other than one of the preceding.

(c) *Definitions.* As used in this provision -

Service-disabled veteran-owned small business concern -

(1) Means a small business concern -

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on

Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern -

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern -

- (1) That is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.

(d) *Notice.*

- (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.
- (2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall -
 - (i) Be punished by imposition of fine, imprisonment, or both;
 - (ii) Be subject to administrative remedies, including suspension and debarment; and
 - (iii) Be ineligible for participation in programs conducted under the authority of the Act.

**K.10 [RFP] FAR 52.219-22 SMALL DISADVANTAGED BUSINESS STATUS (OCT 1990)
ALTERNATE I (OCT 1998)**

(a) *General.* This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) *Representations.*

- (1) *General.* The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either -

___ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net); or

___ (ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2) *For Joint Ventures.* The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. (*The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture:_____.*)

(3) *Address.* The offeror represents that its address ___ is, ___ is not in a region for which a small disadvantaged business procurement mechanism is authorized and its address has not changed since its certification as a small disadvantaged business concern or submission of its application for certification. The list of authorized small disadvantaged business procurement mechanisms and regions is posted at <http://www.arnet.gov/References/sdbadjustments.htm>. The offeror shall use the list in effect on the date of this solicitation. Address, as used in this provision, means the address of the offeror as listed on the Small Business Administration's register of small disadvantaged business concerns or the address on the completed application that the concern has submitted to the Small Business Administration or a Private Certifier in accordance with 13 CFR Part 124, subpart B. For joint ventures, address refers to the address of the small disadvantaged business concern that is participating in the joint venture.

(c) *Penalties and Remedies.* Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall -

(1) Be punished by imposition of a fine, imprisonment, or both;

(2) Be subject to administrative remedies, including suspension and debarment; and

(3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

K.11 [RFP] FAR 52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that -

- (a) It has, has not participated in a previous contract or subcontract subject the Equal Opportunity clause of this solicitation;
- (b) It has, has not filed all required compliance reports; and
- (c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

K.12 [RFP] FAR 52.222-25 AFFIRMATIVE ACTION COMPLIANCE (APR 1984)

The offeror represents that -

- (a) It has developed and has on file, has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2); or
- (b) It has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

K.13 [RFP] FAR 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

K.14 [RFP] FAR 52.225-2 BUY AMERICAN ACT – CERTIFICATE (JUN 2003)

(a) The offeror certifies that each end product, except those listed in paragraph (b) of this provision, is a domestic end product and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products. The terms component, domestic end product, end product, foreign end product, and United States are defined in the clause of this solicitation entitled Buy American Act--Supplies.

(b) Foreign End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(c) The Government will evaluate offers in accordance with the policies and procedures of Part 25 of the Federal Acquisition Regulation.

K.15 [RFP] FAR 52.226-2 HISTORICALLY BLACK COLLEGE OR UNIVERSITY AND MINORITY INSTITUTION REPRESENTATION (MAY 2001)

(a) Definitions. As used in this provision--

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense, the National Aeronautics and Space Administration, and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic-serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

(b) Representation. The offeror represents that it--

is is not a historically black college or university;

is is not a minority institution.

K.16 [RFP] FAR 52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (JUN 2000)

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. Disclosure Statement - Cost Accounting Practices and Certification

(a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

Caution: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

(1) *Certificate of Concurrent Submission of Disclosure Statement.* The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows:

- (i) Original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable; and
- (ii) One copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: *[Name and Address of Cognizant ACO or Federal Official Where Filed:]*

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) *Certificate of Previously Submitted Disclosure Statement.* The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement:

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) *Certificate of Monetary Exemption.* The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling \$50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) *Certificate of Interim Exemption.* The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

Caution: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-

day period following the cost accounting period in which the monetary exemption was exceeded.

II. Cost Accounting Standards - Eligibility for Modified Contract Coverage

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

Caution: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$50 million or more.

III. Additional Cost Accounting Standards Applicable to Existing Contracts

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

yes no

K.16 [RFP] FAR 52.230-7 PROPOSAL DISCLOSURE – COST ACCOUNTING PRACTICE CHANGES (APR 2005)

(a) The offeror shall check "yes" below if the contract award will result in a required or unilateral change in cost accounting practice, including unilateral changes requested to be desirable changes.

Yes No

(b) If the offeror checked "Yes" above, the offeror shall--

(1) Prepare the price proposal in response to the solicitation using the changed practice for the period of performance for which the practice will be used; and

(2) Submit a description of the changed cost accounting practice to the Contracting Officer and the Cognizant Federal Agency Official as pricing support for the proposal.

Part IV – Representation and Instructions
Section L – Instructions, Conditions, and Notices to Offerors

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L.1 [RFP] FAR 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

- L.1.1.** [RFP] This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The Offeror is cautioned that the listed provisions may include blocks that must be completed by the Offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the Offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at these addresses:

<http://www.arnet.gov/far/>

http://www.uscg.mil/hq/cg-85/acquisition_regulations.htm#DHS

Number	Title	Date
FAR 52.215-1	Instructions to Offerors – Competitive Acquisition	Jan 2004

L.2 [RFP] FAR 52.211-1 AVAILABILITY OF SPECIFICATIONS LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS, FPMR PART 101-29 (AUG 1998)

- (a) The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29, and copies of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained for a fee by submitting a request to:

GSA Federal Supply Service
 Specifications Section, Suite 8100
 470 East L'Enfant Plaza, SW
 Washington, DC 20407
 Telephone (202) 619-8925
 Facsimile (202) 619-8978.

- (b) If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (a) of this provision. Additional copies will be issued for a fee.

L.3 [RFP] FAR 52.211-2 AVAILABILITY OF SPECIFICATIONS, STANDARDS, AND DATA ITEM DESCRIPTIONS LISTED IN THE ACQUISITION STREAMLINING AND STANDARDIZATION INFORMATION SYSTEM (ASSIST)(JAN 2006)

- (a) Most unclassified Defense specifications and standards may be downloaded from the following ASSIST websites:
- (1) ASSIST (<http://assist.daps.dla.mil/>);
 - (2) Quick Search (<http://assist.daps.dla.mil/quicksearch/>); or
 - (3) ASSIST docs.com (<http://assistdocs.com>)

- (b) Documents not available from ASSIST may be ordered from the Department of Defense Single Stock Point (DoDSSP) by—
- (1) Using the ASSIST Shopping Wizard (<http://assist.daps.dla.mil/wizard>);
 - (2) Phoning the DoDSSP Customer Service Desk (215) 697-2197, Mon-Fri, 0730 to 1600 EST; or
 - (3) Ordering from DoDSSP, Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

L.4 [RFP] FAR 52.211-3 AVAILABILITY OF SPECIFICATIONS NOT LISTED IN THE GSA INDEX OF FEDERAL SPECIFICATIONS, STANDARDS AND COMMERCIAL ITEM DESCRIPTIONS (JUN 1988)

The specifications cited in this solicitation may be obtained for a fee, depending on the source, from the source(s) cited in Attachment 4 to Section J, External References List.

L.5 [A011] FAR 52-215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997), ALTERNATE IV (OCT 1997)

- (a) Submission of cost or pricing data is not required.
- (b) Provide information described below:
 - (1) A price proposal shall be provided in accordance with L.21.
 - (2) The government reserves the right to require the submission of certified cost or pricing data if the Contracting Officer later determines that none of the exceptions listed at FAR Subpart 15.403-1, Prohibition on Obtaining Cost or Pricing Data, apply.
 - (3) The Contractor shall provide access to those records necessary to permit an adequate evaluation of the proposed price in accordance with FAR Subpart 15.403-3.

L.6 [RFP] FAR 52.216-1 TYPE OF CONTRACT (APR 1984)

The Government anticipates award of a fixed price with economic price adjustment contract. It will also include cost plus fixed fee and firm fixed price line items.

L.7 [A007] FAR 52.233-2 SERVICE OF PROTEST (SEP 2006)

- (a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

For US Mail delivery:

Commandant (CG-9125/KB)
M/F: HSCG23-07-R-AFR001
U. S. Coast Guard Headquarters

2100 Second Street SW
Washington, DC 20593-0001

For commercial courier and hand-carried deliveries:

US Coast Guard (CG-9125/KB)
Attn: Katrina Brisbon, (202) 475-3067
Ref: HSCG23-07-R-AFR001
1900 Half St. SW, Suite 09-0414
Washington, DC 20024

- (b) The copy of any protest shall be received in the office designated within one day of filing a protest with the GAO.

L.8 [RFP] ACCESS TO USCG HEADQUARTERS BUILDING

- L.8.1.** [RFP] The USCG Headquarters building at 1900 Half Street SW, Washington, DC 20024 is a controlled access building. For Offerors intending to hand carry their proposal, prior arrangements for access must be made by contacting the Contracting Officer at least one work day prior to the date required for access. Expect delays clearing building security and plan accordingly. It is the Offeror's responsibility to ensure that proposals are delivered by the due date and time required in the solicitation.

L.9 [RFP] TECHNICAL INFORMATION

- L.9.1.** [RFP] Technical information including the list of referenced documents has been established as indicated in references L.2, L.3, and L.4. The data contained in sections L.2, L.3, and L.4 is not guaranteed for completeness and accuracy and is only provided for the convenience of the Offerors. This technical information is accessible through the FRC-B website: <http://www.fastresponsecutter.net/>.

L.10 [RFP] RFP CLARIFICATIONS AND AMENDMENTS

- L.10.1.** [RFP] In order to provide any necessary clarifications to this RFP, questions may be submitted to the Coast Guard via the Internet website <http://www.fastresponsecutter.net/>. Questions should be submitted through the Offeror's Q&A links provided on the solicitation pages.
- L.10.2.** [RFP] Answers to questions will be posted to the website unless doing so would violate the provisions of FAR 15.201(f), in which case answers will be provided to the individual Offeror via email. Offerors who believe the answer to a question should not be released to the public under the provisions of FAR 15.201(f) shall draw the Contracting Officer's attention to this fact by marking the question as proprietary. Whenever possible, the Contracting Officer will reshape the questions received to allow a response to all Offerors without incorporating information that reveals

individual potential Offerors' confidential business strategy and is protected under Federal Acquisition Regulations (FAR) 3.104 or Subpart 24.2.

- L.10.3.** [RFP] A cutoff date for questions will be established on the solicitation pages of the website <http://www.fastresponsecutter.net/>. The Government cannot guarantee that questions received after the cutoff date will be answered before the proposals are due.
- L.10.4.** [RFP] Amendments will be released via the solicitation pages of the website <http://www.fastresponsecutter.net/> as needed. The Contracting Officer will notify Offerors when amendments are posted and available.

L.11 [A011] DEBRIEFING UNSUCCESSFUL OFFERORS

- L.11.1.** [A013] Notifications to and debriefing of offerors will be conducted in accordance with FAR Subpart 15.5.

L.12 [RFP] PRE-AWARD SURVEY

- L.12.1.** [RFP] The Government reserves the right to conduct a pre-award survey or to require other evidence of technical, managerial, financial, and similar abilities to perform the work described in this solicitation prior to award of a contract.

L.13 [RFP] PROPOSAL DUE DATE

- L.13.1.** [A011] Offerors shall submit each of the required volumes of the proposal by the due dates described in the table below:

Proposal Volume	Required Submission Date
I Parent Craft Design	Monday, 19 Nov 2007
II Management	Monday, 19 Nov 2007
III Technical	Monday, 19 Nov 2007
IV Price	Tuesday, 4 Dec 2007
V Administrative	Monday, 19 Nov 2007
Redacted Copy	Tuesday, 4 Dec 2007

- L.13.2.** [RFP] Exact due dates will be published on the solicitation pages of the website <http://www.fastresponsecutter.net/>.

- L.13.3.** [A007] Proposals will be received at the following address:

For US Mail delivery:

Commandant (CG-9125/KB)
M/F: HSCG23-07-R-AFR001
U. S. Coast Guard Headquarters
2100 Second Street SW
Washington, DC 20593-0001

For commercial courier and hand-carried deliveries:

US Coast Guard (CG-9125/KB)
Attn: Katrina Brisbon, (202) 475-3067
Ref: HSCG23-07-R-AFR001
1900 Half St. SW, Suite 09-0414
Washington, DC 20024

- L.13.4.** [RFP] Offerors are strongly discouraged from submitting proposals using the US Postal Service due to extensive delays and possible damage associated with security requirements involving irradiation of all incoming mail.
- L.13.5.** [RFP] The required number of copies of the proposal must be received by the Contracting Officer at Coast Guard Headquarters prior to 3:00 PM on required submission date. See paragraph L.8 for those intending to hand carry their proposals. No changes or additions to a volume will be permitted after this date, except as provided under clarifications of proposals or discussions, if necessary. An Offeror that fails to meet any due date will be considered "late" in accordance with FAR 52.215-1, Instructions to Offerors - Competitive Acquisition, incorporated at L-1. However, in order to increase competition, the Government may, at its discretion, extend the closing date for submission of proposals.
- L.13.6.** [A007] Questions. Offerors may submit questions/comments on the solicitation package via the website <http://www.fastresponsecutter.net>, beginning one week after RFP issuance. Instructions are on the website. Phone inquiries will not be accepted. The deadline for questions to be addressed at the Pre-Proposal Conference is 18 July 2007. The deadline for questions prior to proposal submission is 20 August 2007. Late questions will be considered, but no answer will be provided prior to proposal submission.

L.14 [RFP] OVERALL ACQUISITION STRATEGY

- L.14.1.** [A011] The intended result of this Request For Proposal (RFP) is the award of a single contract for the production of the Fast Response Cutter - B Class (FRC-B), with a possible fleet size of 34 cutters, designed, constructed and delivered over a six to eight year period.

L.15 [RFP] ALTERNATE PROPOSALS

- L.15.1.** [RFP] Offerors may submit alternate proposals; however, each proposal submitted by an Offeror shall be based on a different parent craft (i.e., Offerors may not submit multiple proposals using the same parent craft). Each proposal submitted by an Offeror shall not reference any other proposal, and will be independently evaluated by the Government.

L.16 [RFP] PROPOSAL INSTRUCTIONS

- L.16.1.** [RFP] GENERAL

- L.16.1.1.** [RFP] Prior to submission of proposals, Offerors are expected to reach a complete understanding of the requirements of this solicitation by a careful study of the RFP and all attachments, and by application of qualified knowledge and experience.
- L.16.1.2.** [RFP] Offerors shall base their proposal on an In-Service Parent Craft design of sufficient detail to allow full evaluation to the level required herein. Proposals shall fully address the Offeror's design, the in-service time and proven capability of the Parent Craft, their capability of performing the design and construction, and their experience in similar patrol boat design and construction. The proposal shall also discuss the capability and resources available to perform the design, lead boat construction and construction of any possible option exercised.
- L.16.1.3.** [A011] The Government intends to evaluate the proposals submitted and select one contractor for award of a fixed price contract for design and construction of a Fast Response Cutter with potential options for up to 33 additional cutters.
- L.16.1.4.** [A010] Reserved.
- L.16.1.5.** [RFP] If a review establishes the need for correction or clarification of this solicitation, such information should be immediately brought to the attention of the Contracting Officer so that the matter can be resolved expeditiously.
- L.16.1.6.** [RFP] Because the Government intends to award without discussions, the Offeror is responsible for providing its best submission on its initial offer.
- L.16.1.7.** [RFP] These instructions prescribe the format of proposals and describe the approach to be used in the development and presentation of proposal information. Proposals must be prepared in accordance with these instructions, providing all required information in the format specified. Failure of a proposal to comply with these instructions may be grounds for exclusion of the proposal from further consideration.
- L.16.1.8.** [RFP] Specific instructions on the content requirements for each volume are provided in sections L.17 through L.22. The information must be presented in sufficient detail to allow a comprehensive evaluation of the Offeror's understanding of this acquisition, approach, resources, technical expertise, and experience. The proposal should clearly demonstrate these in a concise, logical manner, which is easy to read and understand. The emphasis on proposal development should be brevity, clarity and organization. Excess verbiage, unnecessarily elaborate brochures, or lengthy, repetitious, disorganized presentations beyond those sufficient to present a complete and effective proposal are not desired and may be construed as an indication of the Offeror's lack of understanding of the requirements or lack of cost consciousness. Elaborate artwork, expensive paper and binding, and expensive visual or other presentation aids are neither necessary nor desired. Deficiencies, whether informational or technical (e.g., failure of a proposal to comply with solicitation requirements, failure to provide a technical approach or information regarding another area to be evaluated, failure to address the requirements of the Statement of Work or Circular of Requirements for the specifically highlighted sections, and failure to submit program plans, etc.) may be cause for elimination from the competitive range or rejection of an offer. The Government reminds

Offerors that unsupported promises to comply with the contractual requirements will not be sufficient. Proposals must not merely parrot back the contractual specifications, but rather must provide convincing documentary evidence in support of any conclusions stated relating to promise of performance.

- L.16.1.9.** [RFP] Proposals shall completely address the required information in the order in which it appears in these instructions. Wherever information is required to be in a matrix, table or other prescribed format, such information should be provided in the exact specified matrix, table, or format.
- L.16.1.10.** [RFP] Illustrations, calculations, and schematic documentation may be included to further explain the proposal. If the same supporting documentation is required in more than one place within a single Volume, the proposal may reference the submission in the discussion. If more than one Volume requires submission of the same documentation, the proposal must include the same information in each Volume.
- L.16.1.11.** [RFP] If calculations are specifically required, they must be submitted, even if other documentary evidence of performance is submitted. Scanned copies of clearly legible hand written calculations are acceptable.
- L.16.1.12.** [RFP] No cost/price data shall be included in any other Volume than the Price Volume.
- L.16.1.13.** [RFP] This program is unclassified. No classified data shall be submitted as part of an Offeror's proposal.
- L.16.1.14.** [A011] Reserved.
- L.16.1.15.** [RFP] Use of Contractor Advisory and Assistance Services to Review Proposals. Offerors are advised that the Government may use contractor advisory and assistance services to review proposals and provide support during the source selection process. When appropriate, advisors may have access to Offerors' proposals, and may be utilized to objectively review a proposal in a particular functional area and provide comments and recommendations to the source selection evaluation board members and other Government personnel involved in the source selection process. They may not establish final assessments of risk, nor rate or rank Offerors' proposals. Contractor support/advisory personnel are subject to criminal and civil penalties under the Procurement Integrity Act for unauthorized release of contractor bid or proposal information and will be required to sign Non-Disclosure Statements. The Government shall take into consideration requirements for avoiding conflicts of interest and ensure advisors comply with safeguarding contractor bid or proposal information and source selection information. Submission of a proposal in response to this solicitation constitutes approval to release the proposal to Contractor support/advisory personnel for the purposes stated herein.
- L.16.1.16.** [A011] All proposal volumes shall be submitted in writing according to the table below. Each proposal volume shall be submitted both as a paper/hard copy and in electronic format on Compact Disc-Read Only Memory (CD-ROM) in the quantities shown (equal number of paper/hard and electronic). Note: the Coast Guard Headquarters Standard Workstation Image does not have the AutoExec

capability of a CD-ROM enabled, therefore, if the CD-ROM takes advantage of this feature, include on the label the path of the file to initially open. Identify one complete paper/hard-copy set of each proposal as "ORIGINAL" on the outside binder(s) and on the interior title page(s). In the case of discrepancy between various copies, the proposal marked "ORIGINAL" shall take precedence.

Proposal Volume	Number of Copies
I Parent Craft Design	Original + 10 Copies
II Management	Original + 10 Copies
III Technical	Original + 10 Copies
IV Price	Original + 5 Copies
V Administrative	Original + 3 Copies
Redacted Copy (of all volumes)	Original + 1 Copy

L.16.2. [RFP] PROPOSAL FORMAT REQUIREMENTS

L.16.2.1. [RFP] General

- L.16.2.1.1. [RFP] The paper/hard copy of each proposal volume shall be presented in standard 3-ring loose-leaf binders. Volumes may consist of more than one binder. Binders shall not exceed 3 inches thickness. Each binder shall be labeled with the title of the volume, the Offeror's company name, and have a table of contents with corresponding divider tabs.
- L.16.2.1.2. [RFP] The pages are to be on white bond paper.
- L.16.2.1.3. [RFP] Pages shall be individually, sequentially and uniquely numbered (i.e., 1 of 50).
- L.16.2.1.4. [A011] Each page of the proposal volumes shall identify the submitting Offeror in the header or footer.

L.16.2.2. [RFP] Written Proposals

- L.16.2.2.1. [RFP] Written portions of the proposals shall be formatted using minimum of 11-point font for general text. Tables and spreadsheets may use a reduced font of not less than 10 point, and illustrations may use a reduced font style of not less than 8 point. All material may be single-spaced. Proposals shall be formatted on an 8½ x 11 inch page with at least a one (1) inch margin on all sides. Drawings are exempt from this requirement but must be clearly legible.
- L.16.2.2.2. [RFP] Paragraphs shall be numbered following a logical numbering sequence. It is important that paragraph numbering allow for easy reference to a particular section of the proposal in future correspondence.

L.16.2.3. [RFP] Illustrations

- L.16.2.3.1.** [RFP] Illustrations, including photographs, drawings, diagrams, tables and charts, may be included in the proposals.
- L.16.2.3.2.** [RFP] Illustrations may be provided on fold-out pages. These pages are limited to 11 x 17 inches when unfolded and 8½ x 11 inches when folded.
- L.16.2.4.** [RFP] Supporting Documentation
- L.16.2.4.1.** [RFP] Supporting documentation, including calculations, manufacturers cut sheets, and test results, shall be provided as required.
- L.16.2.4.2.** [RFP] Supporting documentation may include illustrations. Illustrations shall meet the requirements of L.16.2.3.
- L.16.2.5.** [RFP] Drawing Booklet (if provided with proposal)
- L.16.2.5.1.** [RFP] The drawings provided in the drawing booklet shall on 11" x 17" paper and clearly marked with the name of the Offeror, the drawing title, the scale, and a unique drawing number in the lower right corner.
- L.16.2.5.2.** [RFP] The drawing booklet shall have a drawing index, and the drawings shall be sorted in Expanded Ship Work Breakdown Structure (ESWBS) order.
- L.16.2.5.3.** [RFP] The drawing booklet shall be bound with a durable cover.
- L.16.2.6.** [RFP] Page Limitations
- L.16.2.6.1.** [A011] Each proposal volume shall be limited to the following page counts:
- | Proposal Volume | Page Limitation |
|------------------------|------------------------|
| I. Parent Craft Design | 10 |
| II. Management | 100 |
| III. Technical | 200 |
| IV. Price | No limit |
| V. Administrative | No limit |
- L.16.2.6.2.** [RFP] Page limitations apply to the narrative. Tables of Contents, Lists of Illustrations, Lists of Tables, Lists of Acronyms and Abbreviations, and Lists of Appendices do not count against the page limit. Required supporting information, limited to drawings, illustrations, and calculations that are referred to from the text but provided as enclosures, appendices, the drawing booklet, or separate documents, do not count against the page limit. Supporting information included within the text will be counted against the page count limit.
- L.16.2.6.3.** [RFP] Any pages over the limits will not be provided to the evaluation teams.
- L.16.2.7.** [RFP] Electronic Copies

- L.16.2.7.1.** [RFP] The CD-ROM copy of each proposal volume shall be formatted the same as the paper/hard-copy, with appropriate folders/directories corresponding to each divider tab. Each CD-ROM shall be labeled on the disc and on the jewel case or protective cover to include: the Offeror's Name; the solicitation name and number (FRC-B, HSCG23-07-R-AFR001); and, as applicable, the volume, set number, disk number and number of disks in set (e.g., Price Volume – Set One - Disk 1 of 2).
- L.16.2.7.2.** [RFP] All electronic submissions shall be source files 100% operable/compatible with and in native formats for one of the following software: Microsoft Office 2003, AutoCAD® Version 2005. When creating electronic copies of licenses, certificates, and documents containing a signature or hand written data, the image shall be recorded into ".PDF" format compatible with Adobe Acrobat 6.0.
- L.16.2.7.3.** [RFP] Electronic links to on-line data via the World Wide Web are not acceptable as the data is subject to alteration after the date of submittal. Such electronic material must be copied and pasted into a document that can be saved as a complete file in and of itself.

L.16.2.8. [RFP] Redacted Copy

- L.16.2.8.1.** [RFP] The contractor shall prepare a version of the proposal that is releasable under the Freedom of Information Act (FOIA). This version shall be submitted as the Redacted Copy volume and have all proprietary information either removed or blanked out. The electronic submission may consist of scanned pages in .pdf format.

L.16.3. [A011] PERIOD FOR ACCEPTANCE OF OFFERS

- L.16.3.1.** [A011] The period for acceptance of offers shall be at a minimum 225 days from the proposal due date.

L.17 [RFP] PROPOSAL CONTENTS – GENERAL REQUIREMENTS

- L.17.1.** [A011] The Offeror's proposal shall be divided up into five separate volumes:

Volume I – Parent Craft Design

Volume II – Management

Volume III – Technical

Volume IV – Price

Volume V - Administrative

- L.17.2.** [RFP] Where it will help support the narrative, Offerors are encouraged to provide illustrations and supporting information.
- L.17.3.** [RFP] To improve the readability of the proposal, Offerors are encouraged to make use of appendices to include information to support the narratives. This information may include calculations, plans, illustrations, equipment specification sheets, and

copies of reports. When an appendix is used, the Offeror shall clearly note in the narrative the appendix that includes the supporting information.

- L.17.4.** [RFP] If the proposal exceeds any of the stated requirements in a way that the Offeror considers beneficial to the Government, clearly state this in the narratives and include appropriate supporting documentation. Items that exceed the stated minimum requirements may be incorporated as part of any resulting contract.
- L.17.5.** [RFP] Throughout the proposal, Offerors are encouraged to highlight experience in areas that relate to the topic being addressed.

L.18 [A011] PROPOSAL CONTENTS – PARENT CRAFT DESIGN (VOLUME I)

- L.18.1.** [A013] Provide a discussion of the Parent Craft selected, the in-service application of the Parent Craft and the overall proven capability of the Parent Craft design. Identify the specific Parent Craft by name or hull number and the date delivered. If the Parent Craft is one of a class of many, provide the Class Name, hull numbers, and delivery dates for other hulls in the class. Provide the name and contact information for the Designer and Builder of the Parent Craft. Provide the service history of the Parent Craft including the date commissioned, the date placed in service, and the current operational status. Provide the name and contact information of the current owner/operator and previous owner/operator(s) (if there were multiple owners/operators). Describe the mission area, mission description and operational profile for the Parent Craft, including the total estimated operating hours and annual operating hours underway. Identify specifically how the Parent Craft meets the definitions and restrictions in the solicitation and where the Parent Craft exceeds any of the requirements. See Paragraph [C.3.2](#) for the Parent Craft definition. Include a fold-out drawing showing the FRC-B outboard profile with the principal characteristics identified.

L.19 [RFP] PROPOSAL CONTENTS – MANAGEMENT (VOLUME II)

L.19.1. [RFP] Section 1: Production Capability.

- L.19.1.1.** [RFP] The Offeror shall discuss the approach to be taken in scheduling the design, construction, test and trials of the lead FRC-B and option FRC-Bs. Include the following information:
- L.19.1.2.** [A014] Provide a Key Events Schedule for the lead FRC-B cutter, three Low Rate Initial Production (LRIP) option cutters, and the first and second four-cutter options indicating such key events as contract award, design review(s), procurement of materials, start of construction, keel laying, launch, tests, trials and delivery. The schedule shall indicate correlation between the design, procurement, production, outfitting, tests and trials. Interrelationship with other work planned in the yard shall be indicated on this schedule. All subcontracted work shall be indicated. Critical paths shall be identified. The schedules may follow the format currently used by the shipyard. Offerors shall use “0” (zero) as the contract award date, option start dates as the date of option exercise and state dates in terms of the number of calendar days after contract award.

- L.19.1.3. [RFP] Demonstrate the availability of all facilities necessary to meet the Government's schedule for the delivery of the cutters. Discuss the impact that present, committed and future or planned work will have on the proposed schedule(s).
- L.19.1.4. [A011] Discuss how you intend to meet the Government's schedule requirement for the possible 34 cutter production. Include specific interrelationships with other known contracts (both awarded and being pursued), and their impact on the schedule for this effort.

L.19.2. [RFP] Section 2: Past Performance.

L.19.2.1. [RFP] Past Performance Questionnaires.

- L.19.2.1.1. [RFP] The Offeror shall initiate the Past Performance Questionnaires (Section L, Attachment 1) for up to 5 projects performed or completed within the last three years. The Offeror shall complete blocks 1 through 7 on the form. The Offeror shall request the customer's representative most knowledgeable of the project to complete blocks 8 through 9 on the form and submit the Past Performance Questionnaire directly to the U.S. Coast Guard POC identified on the form no later than one week following the management volume proposal due date. Relevant past performance will be afforded greater value. The Government may consider past performance information obtained from sources outside an Offeror's proposal, to include the United States Coast Guard.
- L.19.2.1.2. [RFP] The Offeror shall provide as a part of the proposal a list of the firms and projects to whom the past performance questionnaire was sent. Include both a contracting and technical point of contact with current telephone numbers. Offerors are responsible for ensuring that the telephone numbers provided are accurate and that the representative is aware that the Coast Guard will be contacting them regarding the Questionnaire and the Offeror's past performance.
- L.19.2.1.3. [RFP] Discuss your evaluation of your past performance on the projects for which you have initiated past performance questionnaires, including reasons for any schedule slippage or cost overruns. How did you manage or mitigate any risks associated with the project? Discuss how well you met cost, schedule and performance requirements.

L.19.3. [RFP] Section 3: Past Experience.

L.19.3.1. [RFP] Master Project List.

- L.19.3.1.1. [RFP] Offerors shall provide a list of all projects with a scope, value and complexity similar in nature to this acquisition, on-going or completed by the Offeror, within the last ten years. In addition, provide the following information for each project listed:
 - L.19.3.1.1.1. [RFP] Companies performing the project and company division/business segment

- L.19.3.1.1.2. [RFP] Name and location of the project
- L.19.3.1.1.3. [RFP] Contract Type
- L.19.3.1.1.4. [RFP] Brief description of project/scope and demonstration of project complexity
- L.19.3.1.1.5. [RFP] Name and telephone number of the customer's contract manager and technical representative most knowledgeable of the project
- L.19.3.1.1.6. [RFP] Contract number for Government contracts
- L.19.3.1.1.7. [RFP] Offeror's role on the project (Prime/partner or subcontractor)
- L.19.3.1.1.8. [RFP] Original and final/current total contract value
- L.19.3.1.1.9. [RFP] Scheduled and actual start and completion dates
- L.19.3.1.1.10. [RFP] If a subcontractor on the project:
 - a. [RFP] Function/service on the project
 - b. [RFP] Original and final value of subcontract
 - c. [RFP] Contract type for the subcontract

L.19.3.2. [RFP] Relevant Project Summaries.

- L.19.3.2.1. [RFP] Each Offeror shall complete and submit summaries for five projects from the Master Project List. If the Offeror has less than five relevant projects, the Offeror shall submit as many relevant projects as it has.
- L.19.3.2.2. [RFP] For the projects selected, Offerors shall summarize the following information in addition to the requirements identified above, not to exceed two pages for each project (total 10 page limit):
 - L.19.3.2.2.1. [RFP] Describe the relevance to the FRC-B Project
 - L.19.3.2.2.2. [RFP] Describe the project team composition
 - L.19.3.2.2.3. [RFP] Discuss the use of subcontractors (e.g., HVAC, fire suppression, insulation, C4ISR, etc.). Include what was subcontracted out - compare the level of subcontracting to what is proposed on FRC.
 - L.19.3.2.2.4. [RFP] Discuss the type of contract (fixed price, cost reimbursement, etc.).
 - L.19.3.2.2.5. [RFP] Discuss risk. What were the major risk factors?
 - L.19.3.2.2.6. [RFP] Discuss the level of involvement that the customer had during contract performance. Did they have an on-site presence?
 - L.19.3.2.2.7. [RFP] Discuss the facilities used for this project. Discuss whether the facilities used will also be used for the FRC.

L.19.4. [RFP] Section 4: Project Organization & Management

L.19.4.1. [RFP] The Offeror shall describe the project organization and management proposed to support this program from the beginning of the contract award to the end of the warranty period of the final option FRC-B. Describe how the project is intended to function within the existing corporate structure, or any special project structure that will be required. Organizational relationships within existing corporations, companies or subcontractors shall be completely described including contractual relationships.

L.19.4.2. [RFP] Management Processes:

L.19.4.2.1. [RFP] Provide a narrative to fully support the Offeror's capabilities with regard to producing the FRC-Bs and managing all aspects of the Contract. Identify any specific challenges anticipated and discuss planned actions that may be taken to address those challenges.

L.19.4.2.2. [RFP] The Offeror shall provide a description of the planned production and construction methods, processes and fabrication sequences to be used to construct the lead FRC-B and option FRC-Bs. Include potential problem areas and, in particular, address dimensional control, weld distortion, weld sequencing, weld quality and welder certification.

L.19.4.2.3. [RFP] Provide a narrative of the overall management approach with regard to the interface of design and construction functions, and resolution of conflicts among disciplines. Portions of design and construction that will be subcontracted shall be identified, and the work location for the subcontractor shall be supplied. Describe the organizational interface between the Offeror and the subcontractors, and how the performance of each subcontractor will be managed for quality and timeliness.

L.19.4.2.4. [RFP] Provide a narrative describing the Offeror's approach to each of the ten elements of Integrated Logistics Support (ILS) as described in COR Section 080. Include a discussion of how any subcontracting related to ILS will be managed.

L.19.4.2.5. [RFP] The Offeror shall describe the proposed approach to the weight control program and material inspection to ensure control of FRC-B's weight, center of gravity (KG), variable loads, weight margins, list and trim. The Offeror is to address specific aspects and procedures for weight control during design, construction and modifications. The description shall identify when and how parameters are verified during construction and what corrective action will be taken if changes are required. This description shall include:

L.19.4.2.5.1. [RFP] Existing weight control procedures and any required modifications necessary to meet the FRC-B project requirements.

L.19.4.2.6. [RFP] The Offeror shall provide a discussion of the technical approach in the development of the detail design and ship construction drawings which describes converting from the Parent Craft to an FRC-B.

L.19.4.2.7. [RFP] The Offeror shall provide a narrative to fully support the Offeror's integrated systems approach. Briefly describe the methodology used to incorporate various disciplines into the design, operation and support of the FRC-B. Specifically address how Human Engineering, maintainability, and supportability will be addressed, tested/validated, and tracked.

L.19.4.3. [RFP] Facilities:

L.19.4.3.1. [A013] The Offeror shall provide a description of the facilities proposed for construction of 34 cutters. The description shall include construction facilities, welding facilities, machine shops, testing facilities, outfitting, lofting, material handling and storage, and launching facilities. Include a description of the facilities proposed for the Project Resident Office and Primary Crew Assembly Facility (See COR [087](#)).

L.19.4.4. [RFP] Organizational/Team Structure:

L.19.4.4.1. [RFP] Provide an organizational chart for the Offeror and any major subcontractors, and where the FRC-B project fits into the Offeror's organization chart. Discuss the positions in the Offeror's organization and what their role will be on FRC-B project, and what percentage of their time will be dedicated to the project. Include a separate FRC-B project organization chart, and discuss the roles, lines of authority and lines of communication within that organization. Discuss whether a design agent will be used, and if so, how and for what duration the design agent will be integrated into the project. Describe any co-located personnel from the parent craft designer.

L.20 [RFP] PROPOSAL CONTENTS – TECHNICAL (VOLUME III)

L.20.1. [RFP] The Technical Volume shall be organized in the following format:

L.20.1.1. [RFP] Section 1 – Mission Effectiveness

L.20.1.2. [RFP] Section 2 – Cutter Boat Launch & Recovery

L.20.1.3. [RFP] Section 3 – Performance, Including Flank Speed

L.20.1.4. [RFP] Section 4 – Transition from Parent Craft to FRC-B

L.20.2. [RFP] Section 1: Mission Effectiveness.

L.20.2.1. [RFP] The Offeror shall provide a narrative description demonstrating the functionality of the pilothouse, berthing areas, sanitary spaces and commissary spaces and all other living spaces for the proposed FRC-B. Additionally, provide the following drawings: Inboard Profile, Outboard Profile, and Deck Arrangement drawing(s). The drawings shall be of sufficient detail to include all tanks, voids, cofferdams and other unmanned spaces. Include the following information:

L.20.2.1.1. [RFP] Lines of sight (horizontal and vertical) for a 5th percentile female to 95th percentile male (see COR Section 088) standing at the control station in

the pilothouse. Indicate obstructed and unobstructed portions of the 360 degree horizontal view.

- L.20.2.1.2.** [RFP] Direct port and starboard beam outboard view of the surface of the water by a 5th percentile female to 95th percentile male from inside the pilothouse on the port and starboard sides. In other words, how close alongside can you see an object in the water, on the surface, from inside the pilothouse while standing on the port and starboard sides?
- L.20.2.1.3.** [RFP] Indicate deck area per person for each berthing area.
- L.20.2.1.4.** [RFP] Indicate interior and exterior access for all internal spaces.
- L.20.2.1.5.** [RFP] Indicate total seating in messdeck.
- L.20.2.2.** [RFP] Provide a narrative to fully support how the proposed FRC-B hull form meets the requirements of COR Section 079 and will minimize effects of heave, slamming, and deck wetness. Additionally, discuss how any weight differences between the Parent Craft and the proposed FRC-B will affect ship's motions. As a minimum provide:
 - L.20.2.2.1.** [RFP] Any available full-scale or model seakeeping data to support the above narrative.
 - L.20.2.2.2.** [A009] Calculation of GM to Beam and KG to Beam ratios at full load displacement.
 - L.20.2.2.3.** [RFP] Calculation of natural roll period at full load condition, including assumptions and calculations for radius of gyration.
 - L.20.2.2.4.** [RFP] Projected underwater hull area at full load condition; ratio of rudder area (if provided) to projected lateral underwater hull area.
 - L.20.2.2.5.** [RFP] Indicate any active or passive roll or pitch damping devices and their impact upon damping motions.
 - L.20.2.2.6.** [RFP] Narrative description of how the steering system will meet the requirements of COR Section 561.
 - L.20.2.2.7.** [RFP] Indicate types and areas of rudders (if applicable).
 - L.20.2.2.8.** [RFP] Geometry:
 - L.20.2.2.8.1.** [RFP] All positions and locations in SI units relative to the following:
 - L.20.2.2.8.1.1.** [RFP] Longitudinal distances relative to forward perpendicular (station 0) defined as intersection of stem and design waterline, non-dimensionalized by station spacing and location.
 - L.20.2.2.8.1.2.** [RFP] Transverse distances in meters relative to centerline in meters
 - L.20.2.2.8.1.3.** [RFP] Vertical distances in meters relative to baseline

L.20.2.2.8.2. [RFP] Provide the following information for the Parent Craft:

L.20.2.2.8.2.1. [RFP] Hullform defined by at least 10 evenly spaced stations over the length of the ships' design waterline.

L.20.2.2.8.2.2. [RFP] Ship's vertical center of gravity (VCG) relative to baseline

L.20.2.2.8.2.3. [RFP] Appendages - Location and Geometry

L.20.2.2.8.2.4. [RFP] Active fin or rudder roll stabilizer characteristics with automatic gain control (if provided) including:

L.20.2.2.8.2.4.1. [RFP] Fin angle limit for Automatic Gain Control

L.20.2.2.8.2.4.2. [RFP] Fin angle velocity limit for Automatic Gain Control

L.20.2.2.8.2.4.3. [RFP] Speed dependent reduction factors applied to the fin angle limit for Automatic Gain Control

L.20.2.2.8.2.4.4. [RFP] Fin controller coefficients

L.20.2.2.8.2.4.5. [RFP] Fin servo coefficients

L.20.2.2.8.2.4.6. [RFP] Fin controller compensation coefficients

L.20.2.2.8.2.4.7. [RFP] Speed dependent effective fin lift curve slopes

L.20.2.2.8.3. [RFP] Provide the following information for the proposed FRC-B:

L.20.2.2.8.3.1. [RFP] Coordinates of the following locations:

L.20.2.2.8.3.1.1. [RFP] Pilothouse (at helm)

L.20.2.2.8.3.1.2. [RFP] Boat launch station

L.20.2.2.8.3.1.3. [RFP] Weather deck at station 0

L.20.2.2.8.3.1.4. [RFP] Propeller emergence at 25% propeller diameter from top dead center (TDC).

L.20.2.3. [RFP] The Offeror shall provide a description of how the proposed FRC-B will meet the endurance requirements of COR Section 070. Include the following information:

L.20.2.3.1. [RFP] Calculations and attendant assumptions for range and fuel capacity. Fuel calculations shall assume half-load condition, EOSL without accounting for burnoff.

L.20.2.3.2. [RFP] Curve of Fuel Consumption versus Speed (at least loiter speed to Flank Speed) with all shafts engaged at half load condition, EOSL. Identify specific fuel consumption at Loiter Speed, Transit Speed, and at Flank Speed.

- L.20.2.3.3. [RFP] Calculations for refrigeration storage capacity (cubic meters).
- L.20.2.3.4. [RFP] Calculations for freezer storage capacity (cubic meters).
- L.20.2.3.5. [RFP] Calculations for dry provision storage capacity (cubic meters).
- L.20.2.3.6. [RFP] Fuel tank capacity (liters or tonnes).
- L.20.2.3.7. [RFP] Water maker capacity (if provided)(liters/day).
- L.20.2.3.8. [RFP] Potable water storage (liters).

L.20.3. [RFP] Section 2: Cutter Boat Launch & Recovery.

- L.20.3.1. [RFP] The Offeror shall provide a description of how the FRC-B crew will be able to launch and recover the Cutter Boat through sea state 4, seas up to and including 2.5 meter significant wave height and meet the requirements of COR Sections 070, 583 and 663. Additionally, the Offeror shall provide a description of the design and arrangement of the towing operation as required in COR Sections 070, 582 and 663. Include the following information:
 - L.20.3.1.1. [RFP] Outboard profile and arrangement drawing(s) showing the Cutter Boat launch/recovery operation, Cutter Boat stowage and davit location (if equipped). Provide a sketch or drawing showing how positive control of the Cutter Boat is maintained during the entire launch/recovery evolution, through sea state 4, up to and including 2.5 meter significant wave height.
 - L.20.3.1.2. [RFP] Discuss the steps required for launch, recovery and stowage (including ship's heading and speed) and the time associated with each step. Include embarkation and debarkation procedures; the number and location of personnel necessary to launch/recover through sea state 4, up to and including a 2.5 meter significant wave height scenario.
 - L.20.3.1.3. [RFP] A line of sight drawing depicting the projected view of the Cutter Boat launch/recovery and towing operations by a 5th percentile female to 95th percentile male (see Human Factors Engineering in COR Section 088) from inside the pilothouse on the port and/or starboard side.
 - L.20.3.1.4. [RFP] An assessment of the overall safety and efficiency of the Cutter Boat launch/recovery system design. Discuss compensation for pitch, roll, and heave.
 - L.20.3.1.5. [RFP] Provide a description of the quick release and hookup method/mechanism utilized for the Cutter Boat.
 - L.20.3.1.6. [RFP] A narrative description of how the FRC-B, while towing astern, will launch and recover the Cutter Boat. Include in the description any safety enhancements intended to provide/improve personnel safety.
 - L.20.3.1.7. [RFP] Arrangement drawing showing tow bitt location (indicate distance forward of rudder stock), tow rail, deck space for laying out towing hawser and rigging tow, and towing hawser storage. A narrative of how the towing

hawser will be rigged and how the location of the tow bitt will affect maneuverability of the FRC-B while towing astern.

- L.20.3.1.8.** [RFP] PROVIDE FOR STERN RAMP LAUNCH ONLY: Drawings, sketches or similar information detailing system; elevations for launch/recovery of the Cutter Boat from both the stowed position to waterborne launch and from waterborne recovery to stowed position. Discuss design elements to minimize transom sill emergence. Provide technical data on the stern launch system (transom door(s), ramp, haul-in winch, etc.) to include safe working load (indicate factor of safety for wire, structure and hook); winch speed(s); back-up features; special features; indicate where described features are automatic, adjustable, electric, hydraulic or manual; indicate power requirements and hydraulic capacities as applicable. Provide a brief description of the Cutter Boat gripping mechanism, rollers and/or guides used to stow and support the Cutter Boat.
- L.20.3.1.9.** [RFP] PROVIDE FOR SINGLE POINT DAVIT EQUIPPED ONLY: Drawings, sketches or similar information to indicate the coverage area of the davit; elevations for raising/lowering the Cutter Boat from both the stowed position to waterborne launch and from waterborne recovery to stowed position. Technical data on the davit to include reach; safe working load at the reach necessary to launch/recovery the Cutter Boat (indicate factor of safety for wire, structure and hook); winch/hoist speed(s), constant tension capability (or other compensation devices if applicable); deploy speed(s) (if applicable); back-up features; special features; indicate where described features are automatic, adjustable, electric, hydraulic or manual; indicate power requirements and hydraulic capacities as applicable. Maximum list of FRC-B during launch/recovery of Cutter Boat with Coast Guard payload (total 8,500 lbs).

L.20.4. [RFP] Section 3: Performance, Including Flank Speed.

- L.20.4.1.** [RFP] Discuss the proposed FRC-B's flank speed, and how flank speed was calculated/estimated from the Parent Craft's top speed. The Offeror shall provide the speed and powering calculations demonstrating that the FRC-B meets or exceeds the requirements of the COR. Include the following information:
- L.20.4.1.1.** [RFP] Flank speed as defined in COR Section 070-2.
- L.20.4.1.2.** [RFP] A narrative description of major components of the propulsion system. As a minimum, the major components shall include propulsion engines, reduction gears, trolling valves, loiter drive, shafting, propulsors, control and monitoring systems, struts and bearings (as provided). A brief discussion on how the minimum maneuvering speed requirements will be met and any restrictions on operating at minimum maneuvering speed while towing.
- L.20.4.1.3.** [RFP] The size, type, rating and model of the main propulsion diesel engines. Include documentation to satisfy requirement of COR Section 233 at a rating equal to or in excess of the power rating required to meet the FRC-B requirements in COR Section 070. Manufacturer's engine data including Brake Horsepower (BHP) versus engine RPM and specific fuel consumption

versus engine RPM curves. Propulsion plant calculations and analyses to support any equipment substitutions/modifications to the Parent Craft.

L.20.4.1.4. [RFP] The size, type, rating and model of the reduction gears.

L.20.4.1.5. [RFP] Calculations and attendant assumptions for hull resistance and powering. Propulsion system (including all components) calculations to satisfy COR requirements, to include:

L.20.4.1.5.1. [RFP] Curves of Speed versus BHP at full load, EOSL, condition, and at half load, EOSL, condition.

L.20.4.1.5.2. [RFP] Curve of BHP versus Engine RPM at full load, EOSL, condition. Indicate minimum continuous clutched-in engine RPM.

L.20.5. [RFP] Section 4: Transition from Parent Craft to FRC-B.

L.20.5.1. [A013] Provide a narrative to fully demonstrate the Offeror's understanding with regard to the technical effort required to develop the Offeror's selected Parent Craft into a fully compliant proposed FRC-B, meeting the classification requirements in COR Section 070. Identify any specific risks anticipated and discuss planned actions that may be taken to address those risks.

L.20.5.2. [RFP] ABS HSNC Classification requirements impacts. Provide a narrative describing the Offeror's thorough understanding of what is required to transition from the selected Parent Craft to the proposed FRC-B that meets the classification requirements. Include a discussion on the loads selected for the design. Provide a description of the structural strength of the FRC-B. Include a narrative of the Parent Craft structural design methodology and a discussion of any modifications to the Parent Craft structure as authorized in the COR along with the effect of these changes on the overall structural strength of the FRC-B design. Provide the following required Parent Craft Data for an ABS HSNC Classification Assessment as well as any preliminary data that exists for the proposed FRC-B:

L.20.5.2.1. [RFP] General Arrangements

L.20.5.2.2. [RFP] Forward, Aft, and Midship Section

L.20.5.2.3. [RFP] Watertight Bulkhead Section

L.20.5.2.4. [RFP] Structural Plans & Profiles (Bottom, Side Shell, Wet Deck, Main Deck, Superstructure Decks)

L.20.5.2.5. [RFP] Proposed Operational Envelope

L.20.5.2.6. [A009] Direct Analysis/SFA (Spectral Fatigue Analysis) Plan (discussion on how the design team plans on complying with these requirements)

L.20.5.2.7. [RFP] Fire Zone Boundary Diagram

L.20.5.2.8. [RFP] Safety Plan (location, size, & type of active firefighting systems)

- L.20.5.2.9.** [RFP] Bilge System
- L.20.5.2.10.** [RFP] Electrical One Line Diagram
- L.20.5.2.11.** [RFP] Propulsion / Automation Controls
- L.20.5.2.12.** [A010] Low Flash Point (less than 60°C) Fuel Oil / Transfer Piping
- L.20.5.2.13.** [RFP] Material and material properties. Indicate any substitutions between the Parent Craft and the proposed FRC-B as authorized in COR Section 100. Discuss the effect of these changes (if made) on the overall structural strength of the FRC-B.
- L.20.5.2.14.** [RFP] Structure modifications from Parent Craft (if any) for Cutter Boat launch and recovery system.
- L.20.5.3.** [RFP] The Offeror shall provide a narrative discussing the Parent Craft's draft and trim and list characteristics including how the proposed FRC-B will meet the draft requirements of COR Section 070, trim and list requirements of COR Section 079 and displacement and LCG requirements of RFP Section C. Include the following information:
 - L.20.5.3.1.** [RFP] Calculations for FRC-B draft at minimum operating condition and at full load EOSL condition, including hull draft, trim, list, freeboard, and maximum appendage height below baseline.
 - L.20.5.3.2.** [RFP] Detailed weight report for the selected Parent Craft (in accordance with COR Section 096) and a concept design weight estimate for the proposed FRC-B. The weight estimate shall indicate differences between the Parent Craft and the proposed FRC-B and shall show weight information in at least two digit (##0) SWBS breakdown. Provide a narrative identifying the significant weight, VCG, LCG and TCG changes from the Parent Craft at light ship, minimum operating and full load (EOSL) conditions.
- L.20.5.4.** [RFP] The Offeror shall provide a summary of the intact and damaged stability of the proposed FRC-B. Include a narrative of how the proposed FRC-B design meets the requirements of COR Section 079. Include the following information:
 - L.20.5.4.1.** [RFP] Calculations for intact and damage stability at full load (EOSL) condition.
 - L.20.5.4.2.** [RFP] Hydrostatic Table for proposed FRC-B.
 - L.20.5.4.3.** [RFP] Cross Curves of Stability for proposed FRC-B.
 - L.20.5.4.4.** [RFP] Floodable length curve for full load (EOSL) condition.
 - L.20.5.4.5.** [RFP] Curves of Maximum Allowable KG (intact and damaged) versus Displacement, from lightship to full load (EOSL) condition.

L.21 [A011] PROPOSAL CONTENTS – PRICE (VOLUME IV)**L.21.1. [A011] General Information**

L.21.1.1. [A011] Submission of cost or pricing data with the proposal is not required. However, information other than cost or pricing data is required to evaluate the realism of the proposed prices. Furthermore, the Government reserves the right to require the submission of cost or pricing data if the Contracting Officer later determines that none of the exceptions listed at FAR Subpart 15.403-1(b) applies.

L.21.1.2. [A011] Reserved.

L.21.1.3. [A011] All cost and pricing information submitted in response to these proposal instructions will be treated as business confidential.

L.21.1.4. [A011] There is no page limitation on the cost/price proposal.

L.21.1.5. [A011] The cost/price proposal must be a self-contained document not relying on any other volumes for information. The cost/price proposal must be mathematically correct and all parts must be numerically consistent. The cost/price proposal must correlate with the technical proposal in a logical and consistent manner.

L.21.1.6. [A013] All cost/price proposals shall be submitted in a hard copy format and electronically as described in Section L.16.2.7. In the case of a conflict between these two formats, the hard copy format shall prevail.

L.21.1.7. [A011] All CLINS: If Facilities Capital Cost of Money is included in your proposed cost, calculate the Cost of Money in accordance with FAR 31.205–10.

L.21.2. [A011] Price Proposal Content

L.21.2.1. [A011] Include a completed copy of [Section B](#). All prices shall be provided in US dollars. CLINs shall be forward priced to March 2008.

L.21.2.2. [A011] A statement as to whether the offeror's accounting system has been determined to be adequate by the Defense Contract Audit Agency (DCAA) and if so, a point of contact in DCAA.

L.21.2.3. [A013] A copy of the offeror's most recent annual financial statement and a copy of their most recent quarterly (or other partial year) financial statement. The Offeror shall provide information deemed relevant to their proposal to demonstrate their ability to perform the requirements from a financial point of view. Similar information is to be provided on major subcontractors, whose total price for all effort in response to this solicitation exceeds ten million dollars.

L.21.2.4. [A011] The costs associated with installation and checkout kits for Contractor Furnished Equipment (CFE) are to be included in the price of the respective ship construction CLINS.

L.21.2.5. [A011] Provide a written copy and a narrative summary of the license agreement from the parent designer to the prime contractor, including transfer of technology,

support of the licensor to the licensee for technical issues, special tooling, etc. Discuss how that agreement is translated into the Reprocurement and Data License agreement (consistent with Section C RDLP requirements) and the assumptions and rationale for your pricing. Provide sufficient information to explain your CLIN 0009 option pricing and then how your pricing changes for the remaining RDLP option CLINS (0015, 0019, 0023, 0027, and 0031). Specifically identify any royalty costs that the Coast Guard is responsible for in each CLIN.

L.21.2.6. [A014] Deleted.

L.21.2.7. [A014] Cost Element Summary by Ship's Work Breakdown Structure (applicable to each ship construction CLIN: 0007A, 0008A, 0013A, 0014A, 0017A, 0018A, 0021A, 0022A, 0025A, 0026A, 0029A, 0030A):

The offeror shall provide a breakdown of the proposed price for each FRC-B construction CLIN using the format shown in the attached excel spreadsheet. Cost for each CLIN identified above shall be broken out in the "Labor & Material Worksheet" by CLIN and SWBS (1 digit SWBS) into the appropriate categories. Direct Material should be identified in sufficient detail and down to the component level such that costs can also be traced to the components included in the Insurance Spares CLINS (i.e. propeller, rudder, propulsion engines, etc.). The cost from the first worksheet are then transferred to the second worksheet entitled "WBS rollup." These worksheets are self explanatory.

L.21.2.7.1. [A011] Provide a comprehensive narrative that discusses in detail, for each ship construction CLIN (0007A, 0008A, 0013A, 0014A, 0017A, 0018A, 0021A, 0022A, 0025A, 0026A, 0029A, 0030A) the assumptions and business decisions that form the basis for the proposed prices. This should include the learning curves applied, the anticipated sales volume, and the anticipated workforce. In addition, describe each indirect cost pool, including the allocation base used to distribute the cost pool to contracts. The proposal shall also include a discussion of how the workforce and how indirect costs would be impacted by a variation in production quantities (4 ships vs 6) on a year by year basis.

L.21.2.7.2. [A011] Provide the current and planned ship construction work at your facility for the potential duration of any resulting FRC-B contract (through final ship delivery assuming 34 ships are ordered) and indicate whether the customer(s) is government or private.

L.22 [A011] PROPOSAL CONTENTS – ADMINISTRATIVE (VOLUME V)

L.22.1. [A011] This volume will include: a Completed SF33, and the information required to complete Section F, Section G, Section H, Section J, Section K and any other information required to complete the contract.

L.23 [RFP] PREPROPOSAL CONFERENCE

L.23.1. [RFP] The Coast Guard will be conducting a pre-proposal conference for the FRC-B acquisition. The conference will be held on Wednesday, 25 July 2007. The purpose of this conference is to provide a brief summary of the program and allow for industry

to ask questions regarding the solicitation. Details and sign-up procedures can be found on the project website at <http://www.fastresponsecutter.net>.

L.24 [A014] LIST OF SECTION L ATTACHMENTS

[Attachment 1 – Past Performance Questionnaire](#)

[Attachment 2 – FRC WBS-CLIN Rollup.xls](#)

[Attachment 3 – Pricing Summary by Cost Element Worksheet](#)

Section L – Attachment 1

PAST PERFORMANCE QUESTIONNAIRE

Your assistance is requested in support of a source selection.

Please complete this Questionnaire and mail or send by facsimile [FAX (202) 475-3908] to:

U.S. Coast Guard Headquarters
 Attn: Katrina Brisbon
 1900 Half Street SW
 Washington, DC 22024

Desired Response Date:
06 Sep 2007

When complete, the information on this form is SOURCE SELECTION SENSITIVE INFORMATION (41 U.S.C. 423) and shall be protected accordingly.

TO BE COMPLETED BY OFFEROR

1. CONTRACTOR NAME & ADDRESS:	2. CONTRACT NO.:
	3. CONTRACT INITIATION DATE:
	4. COMPLETION DATE:
	5. CONTRACT VALUE (with options): \$
	6. TYPE OF CONTRACT:

7. DESCRIPTION OF CONTRACT REQUIREMENTS:

Please add a continuation page if additional space necessary.

TO BE COMPLETED BY EVALUATING ORGANIZATION REPRESENTATIVE

8. EVALUATION: a. EVALUATOR'S NAME, POSITION (Project Manager/ COR/ Other) AND ORGANIZATION:

b. EVALUATOR'S PHONE NUMBER:
 EVALUATOR:

c. MONTHS PERFORMANCE MONITORED BY

Please circle the response code for each topic (A – G) that best reflects your experience with this contractor.

EX = Exceptional **S** = Satisfactory **US** = Unsatisfactory
VG = Very Good **MG** = Marginal **N/O** = Not Observed

A. Quality of Products and Services - Assess the contractor's conformance to contract requirements, specifications, and standards of good workmanship (e.g., technical, professional, environmental, or safety and health standards).

EX VG S MG US N/O

B. Performance – Assess the contractor's performance for the project.

EX VG S MG US N/O

C. Schedule – Assess the timeliness of contractor against the schedule of activities.

EX VG S MG US N/O

D. Technical Requirements – Assess the contractor's fulfillment of the technical requirements of the contract.

EX VG S MG US N/O

E. Cost Control – Assess the contractor's control of the contract budget and costs.

EX VG S MG US N/O

F. Customer Satisfaction – Assess the contractor's responsiveness to customer concerns and "user friendliness".

EX VG S MG US N/O

G. Overall Assessment.

EX VG S MG US N/O

If an Award Fee contract, what was the average Award Fee %?

PERFORMANCE QUESTIONNAIRE

Your assistance is requested in support of a source selection.

Please complete this Questionnaire and mail or send by facsimile [FAX (202) ___-____] to:
 U.S. Coast Guard Headquarters
 Attn: Katrina Brisbon
 1900 Half Street SW
 Washington, DC 22024

Desired Response Date: _____

When complete, the information on this form is SOURCE SELECTION SENSITIVE INFORMATION (41 U.S.C. 423) and shall be protected accordingly.

TO BE COMPLETED BY OFFEROR

1. CONTRACTOR NAME & ADDRESS:	2. CONTRACT NO.:
	3. CONTRACT INITIATION DATE:
	4. COMPLETION DATE:
	5. CONTRACT VALUE (with options): \$
	6. TYPE OF CONTRACT:

7. DESCRIPTION OF CONTRACT REQUIREMENTS:

Please add a continuation page if additional space necessary.

TO BE COMPLETED BY EVALUATING ORGANIZATION REPRESENTATIVE

8. EVALUATION: a. EVALUATOR'S NAME, POSITION (Project Manager/ COR/ Other) AND ORGANIZATION:

b. EVALUATOR'S PHONE NUMBER: _____ c. MONTHS PERFORMANCE MONITORED BY EVALUATOR: _____

Please circle the response code for each topic (A – G) that best reflects your experience with this contractor.

EX = Exceptional **S** = Satisfactory **US** = Unsatisfactory
VG = Very Good **MG** = Marginal **N/O** = Not Observed

A. Quality of Products and Services - Assess the contractor's conformance to contract requirements, specifications, and standards of good workmanship (e.g., technical, professional, environmental, or safety and health standards).	EX	VG	S	MG	US	N/O
B. Performance – Assess the contractor's performance for the project.	EX	VG	S	MG	US	N/O
C. Schedule – Assess the timeliness of contractor against the schedule of activities.	EX	VG	S	MG	US	N/O
D. Technical Requirements – Assess the contractor's fulfillment of the technical requirements of the contract.	EX	VG	S	MG	US	N/O
E. Cost Control – Assess the contractor's control of the contract budget and costs.	EX	VG	S	MG	US	N/O
F. Customer Satisfaction – Assess the contractor's responsiveness to customer concerns and "user friendliness".	EX	VG	S	MG	US	N/O
G. Overall Assessment.	EX	VG	S	MG	US	N/O

If an Award Fee contract, what was the average Award Fee %? _____

Offeror: _____

Interview Date: _____

Evaluator: _____ Project: _____
Interviewee: _____

FRC-B Past Performance Phone Interview Questions

General

1. Describe the contractor's overall management of the project. Did the contractor effectively use any particular project management tool?
 - a. Did the contractor provide an adequate Project Plan that met the needs of the project?
 - b. If so, were there a lot of changes, few changes, or no changes?
 - c. Were the changes Government or contractor initiated?
 - d. Were the changes a result of lack of adequate oversight on the part of the contractor?

Quality

2. Describe the quality of work performed (e.g., performance, people, process, planning, design, etc.).
3. Were significant deficiencies discovered after contract completion?
4. Did the contractor correct deficiencies to an acceptable level and in a timely manner? If not, explain:

Performance

5. How effective was the contractor in identifying and resolving potential and actual problems?
6. Describe the degree of difficult or complicated aspects of the project and how the contractor dealt with them.
7. How well did the contractor apply sufficient resources to the project?
8. How well did the contractor identify potential risks, and take steps to avoid or mitigate those risks?
9. If the contractor used subcontractors, how well were they managed?
10. Did the contractor follow any industry recognized standard processes (e.g., ISO-9000)?
11. Describe the contractor's design and construction approach.
12. Was the contractor required to conduct trade-off analysis that weighed cost, schedule and performance against requirements?
 - a. How successful were they?

- b. What were the project deliverables?

Schedule

13. Did the contractor meet schedule/ milestone dates? If not, why not?
14. Was the project on a strict and/or accelerated schedule?

Technical Requirements

15. Did the contractor demonstrate adequate technical knowledge for the referenced project?
16. Did the contractor possess the technical expertise to accommodate requested changes?
17. Was this project based upon objectives, or was the contractor given detailed requirements?
- a. If objectives, how successful was the contractor in defining requirements?
18. How well did the contractor respond to changing requirements (timeliness and quality of his approach)?

Cost Control

19. Was the contractor effective in controlling costs on the project?
- a. Was the project completed within the cost estimate? If not, why not?
- b. If there was an overrun, how significant was the overrun?
20. Did the contractor submit frivolous change order requests or permit subcontractors to do the same?
- a. Were change order negotiations difficult?
- b. Was there any litigation on the project?

Customer Satisfaction

21. How would you describe the contractor's responsiveness and your overall satisfaction with their performance?
- a. Was your relationship with the contractor a "team effort?"
22. What are the company's strong points, or what do you like most about them?
23. In which areas do you feel they could have improved?
24. Would you be willing to enter into another contract with this contractor?

DIRECT MATERIALS		AMOUNT
Description		
Description		
Description		
Description		
Description		
Description		
Description		
Description		
Description		
TOTAL DIRECT MATERIALS		

SUBCONTRACTS		AMOUNT
Subcontractor name		
Subcontractor name		
Subcontractor name		
TOTAL SUBCONTRACTS		

OTHER DIRECT COSTS		AMOUNT
Cost description		
Cost description		
Cost description		
Cost description		
Cost description		
Cost description		
Cost description		
Cost description		
Cost description		
TOTAL OTHER DIRECT COSTS		

WBS CLIN ROLLUP

ESTIMATED COST	CLIN 0007A Amount	CLIN 0008A Amount	CLIN 0013A Amount	CLIN 0014A Amount	CLIN 0017A Amount	CLIN 0018A Amount	CLIN 0021A Amount	CLIN 0022A Amount	CLIN 0025A Amount	CLIN 0026A Amount	CLIN 0029A Amount	CLIN 0030A Amount	TOTAL
DIRECT LABOR:													
000 GENERAL GUIDANCE AND ADMINISTRATION													
100 HULL STRUCTURE													
200 PROPULSION PLANT													
300 ELECTRIC PLANT													
400 COMMAND & SURVEILLANCE													
500 AUXILIARY SYSTEMS													
600 OUTFIT AND FURNISHINGS													
700 ARMAMENT													
800 INTEGRATION/ENGINEERING													
900 SHIP ASSEMBLY/SUPPORT SERVICES													
TOTAL DIRECT LABOR													
INDIRECT COSTS (Those indirect cost pools that are applied using direct labor as the allocation base - e.g., Fringe Benefits, Overhead)													
DIRECT MATERIALS													
000 GENERAL GUIDANCE AND ADMINISTRATION													
100 HULL STRUCTURE													
200 PROPULSION PLANT													
300 ELECTRIC PLANT													
400 COMMAND & SURVEILLANCE													
500 AUXILIARY SYSTEMS													
600 OUTFIT AND FURNISHINGS													
700 ARMAMENT													
800 INTEGRATION/ENGINEERING													
900 SHIP ASSEMBLY/SUPPORT SERVICES													
TOTAL DIRECT MATERIALS													
SUBCONTRACTS													
000 GENERAL GUIDANCE AND ADMINISTRATION													
100 HULL STRUCTURE													
200 PROPULSION PLANT													
300 ELECTRIC PLANT													
400 COMMAND & SURVEILLANCE													
500 AUXILIARY SYSTEMS													
600 OUTFIT AND FURNISHINGS													
700 ARMAMENT													
800 INTEGRATION/ENGINEERING													
900 SHIP ASSEMBLY/SUPPORT SERVICES													
TOTAL SUBCONTRACTS													
OTHER DIRECT COSTS													
000 GENERAL GUIDANCE AND ADMINISTRATION													
100 HULL STRUCTURE													
200 PROPULSION PLANT													
300 ELECTRIC PLANT													
400 COMMAND & SURVEILLANCE													
500 AUXILIARY SYSTEMS													
600 OUTFIT AND FURNISHINGS													
700 ARMAMENT													
800 INTEGRATION/ENGINEERING													
900 SHIP ASSEMBLY/SUPPORT SERVICES													
TOTAL OTHER DIRECT COSTS													
INDIRECT COSTS Applied Using Other Than Direct Labor as the Allocation Base (e.g., material handling, subcontract administration, G&A)													
COST OF MONEY													
TOTAL COST													
Profit													
Total Price													

CLIN PRICING SUMMARY BY COST ELEMENT

CLIN		NAME	QTY	LAB HRS	LAB COST	MAT'L	ODC	OVH	G&A	SUBTOTAL	PROFIT	FCCM	TOTAL
0001		Design of FRC-B	1 ea.										
0001	A	Design Data	1 lot										NSP
0002		System Safety Prog.	1 ea.										
0003		Human Eng'r Prog.	1 ea.										
0004		Training Equip. Pkg.	1 lot										
0005		Training Devel. & Data	1 lot										
0006		Model	2 ea.										
0007		Constuction of LEAD											
		FRC-B											
0007	A	Construct FRC-B	1 ea.										
0007	B	Warranty	1 year										
0007	C	Data	1 lot										NSP
0007	D	Supply Support (CPFF)	1 lot										
0007	E	Training	1 job										
0007	F	Builder's Risk Insurance	1 lot										
OPTION PERIOD ONE													
0008		Low Rate Initial Prod.											
0008	A	Constuct FRC-B (EPA)	3 ea.										
0008	B	Warranty	3 years										
0008	C	Data	3 lots										NSP
0008	D	Supply Support (CPFF)	3 lots										
0008	E	Training	3 jobs										
0008	F	Builder's Risk Insurance	3 lots										
0008	G	Reserved for EPA	Quart.										TBD
0009		RDLP	1 lot										
0010		Interim Cont. Sup. Support	1 lot										
0011		System Stock (CPFF)	1 lot										
0012		Insurance Spares											
0012	A	Propellers	1 SS										
0012	B	Rudders	1 SS										
0012	C	Water Jet Assemblies	1 SS										
0012	D	Propulsion Shaft Struts	1 SS										
0012	E	Propulsion Shaft Bearings	1 SS										
0012	F	Propulsion Engines	1 SS										
0012	G	Reduction Gears	1 SS										
0012	H	Loiter Drives	1 SS										
0012	I	S/S Generator Sets	1 SS										
0012	J	Emergency Gen. Set	1 SS										
0012	K	Propulsion Shafts	1 SS										
0012	L	Propulsion Couplings	1 SS										
0012	M	Cutter Boat	1 ea.										
OPTION PERIOD TWO													
0013		Four FRC-B											
0013	A	Construct. FRC-B (EPA)	4 ea.										
0013	B	Warranty	4 years										
0013	C	Data	4 lots										NSP
0013	D	Supply Support (CPFF)	4 lots										
0013	E	Training	4 jobs										
0013	F	Builder's Risk Insurance	4 lots										
0013	G	Reserved for EPA	Quart.										TBD
OR													
0014		Six FRC-B											
0014	A	Construct. FRC-B (EPA)	6 ea.										
0014	B	Warranty	6 years										
0014	C	Data	6 lots										NSP
0014	D	Supply Support (CPFF)	6 lots										
0014	E	Training	6 jobs										
0014	F	Builder's Risk Insurance	6 lots										
0014	G	Reserved for EPA	Quart.										TBD
0015		Reprocurement Data and License Package	1 lot										
0016		Insurance Spares											
0016	A	Propellers	1 SS										
0016	B	Rudders	1 SS										
0016	C	Water Jet Assemblies	1 SS										
0016	D	Propulsion Shaft Struts	1 SS										
0016	E	Propulsion Shaft Bearings	1 SS										
0016	F	Propulsion Engines	1 SS										
0016	G	Reduction Gears	1 SS										
0016	H	Loiter Drives	1 SS										
0016	I	S/S Generator Sets	1 SS										
0016	J	Emergency Gen. Set	1 SS										
0016	K	Propulsion Shafts	1 SS										
0016	L	Propulsion Couplings	1 SS										
0016	M	Cutter Boat	1 ea.										
OPTION PERIOD THREE													
0017		Four FRC-B											
0017	A	Construct FRC-B (EPA)	4 ea.										
0017	B	Warranty	4 years										
0017	C	Data	4 lots										NSP
0017	D	Supply Support (CPFF)	4 lots										
0017	E	Training	4 jobs										
0017	F	Builder's Risk Insurance	4 lots										

0028	H	Loiter Drives	1 SS										
0028	I	S/S Generator Set	1 SS										
0028	J	Emergency Gen. Set	1 SS										
0028	K	Propulsion Shafts	1 SS										
0028	L	Propulsion Couplings	1 SS										
0028	M	Cutter Boat	1 ea.										
OPTION PERIOD SIX													
0029 Four FRC-B													
0029	A	Construct FRC-B (EPA)	4 ea.										
0029	B	Warranty	4 years										
0029	C	Data	4 lots									NSP	
0029	D	Supply Support (CPFF)	4 lots										
0029	E	Training	4 jobs										
0029	F	Builder's Risk Insurance	4 lots										
0029	G	Reserved for EPA	Quart.									TBD	
OR													
0030 Six FRC-B													
0030	A	Construct FRC-B (EPA)	6 ea										
0030	B	Warranty	6 years										
0030	C	Data	6 lots									NSP	
0030	D	Supply Support (CPFF)	6 lots										
0030	E	Training	6 jobs										
0030	F	Builder's Risk Insurance	6 lots										
0030	G	Reserved for EPA	Quart.									TBD	
0031		Reprocurement Data and License Package	1 lot										
0032 Insurance Spares													
0032	A	Propellers	1 SS										
0032	B	Rudders	1 SS										
0032	C	Water Jet Assemblies	1 SS										
0032	D	Propulsion Shaft Struts	1 SS										
0032	E	Propulsion Shaft Bearings	1 SS										
0032	F	Propulsion Engines	1 SS										
0032	G	Reduction Gears	1 SS										
0032	H	Loiter Drives	1 SS										
0032	I	S/S Generator Set	1 SS										
0032	J	Emergency Gen. Set	1 SS										
0032	K	Propulsion Shafts	1 SS										
0032	L	Propulsion Couplings	1 SS										
0032	M	Cutter Boat	1 ea.										
SUBTOTALS													

NSP: Not Separately Priced
 TBD: To Be Determined (Equitable Price Adjustment)

**Part IV – Representation and Instructions
Section M – Evaluation Factors for Award**

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M.1 [RFP] PROCEDURES FOR AWARD

- M.1.1.** [RFP] Proposals shall be submitted in accordance with the instructions in [Section L](#). Proposals will be reviewed for compliance with the solicitation requirements. If proposals contain more than the specified page limits, only the pages up to the limiting number for that volume will be evaluated.
- M.1.2.** [A011] A proposal may be rejected as grossly deficient and excluded from further consideration for award under the following conditions:
- M.1.2.1.** [RFP] If the Contracting Officer determines that the proposal does not materially comply with the requirements.
 - M.1.2.2.** [RFP] If a major rewrite of any section or sections is required to permit evaluation.
 - M.1.2.3.** [RFP] The Parent Craft fails to meet the requirements of [Section C.3](#).
 - M.1.2.4.** [RFP] The proposed FRC-B fails to meet the requirements of [Section C.3](#).
- M.1.3.** [A011] A proposal may be rejected and excluded from further consideration for award for other reasons including, but not limited to, the following conditions.
- M.1.3.1.** [A011] If proposals contain a charge for failure to exercise an option.

- M.1.3.2.** [A011] If a proposal contains conditions discussed in the Section M.6 provision entitled Evaluation of Offers Subject to an Economic Price Adjustment Clause ([HSAR 3052.216-70](#) (JUN 2006)).
- M.1.4.** [RFP] Under the Best Value Continuum, utilizing the trade-off process, the Government reserves the right to award a contract to other than the lowest priced Offeror. Prospective Offerors are advised that proposals with the lowest price may not be chosen for award if a higher priced proposal is determined, by evaluation of the proposals according to the established evaluation factors, to be more advantageous to the Government. In such case, the superiority of the successful offeror in areas other than price would justify the added expenditure.
- M.1.5.** [RFP] Discussions and Final Proposal Revisions. The Government intends to evaluate proposals and award a contract without discussions with Offerors. However, the Government reserves the right to conduct discussions if determined by the Contracting Officer to be necessary. Under those circumstances:
- M.1.5.1.** [RFP] A proposal may be rejected if it is determined that the proposal is not among the most highly rated proposals.
- M.1.5.2.** [RFP] Offerors are advised that, if Final Proposal Revisions are requested, unsupported changes may result in a lower overall proposal evaluation, and an otherwise acceptable proposal could be placed in jeopardy. A Final Proposal Revision which reflects a major redirection of effort may be rejected without further evaluation.
- M.1.5.3.** [RFP] If, after conducting discussions and a request for Final Proposal Revisions is issued, an Offeror takes exception to any solicitation terms and conditions, an otherwise acceptable proposal could be placed in jeopardy.
- M.1.6.** [RFP] A written award or acceptance of offer mailed or otherwise furnished to the successful Offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the Government.

M.2 [RFP] BASIS FOR AWARD

- M.2.1.** [RFP] In order to be eligible for award, the Offeror's proposal must comply in all material respects with the requirements of law, regulation, and the terms and conditions set forth in the solicitation; and the Offeror must be determined responsible according to the standards set forth in [FAR Subpart 9.1](#).
- M.2.2.** [RFP] The contract award decision will be based on the proposal that based upon the trade-off process, is the best value to the Government in terms of the established evaluation factors. The Source Selection Authority will determine which proposal provides the best value to the Government.

- M.2.3.** [RFP] The Government may (1) reject any or all offers if such action is in the public interest, (2) accept other than the lowest offer, and (3) waive informalities and minor irregularities in offers received.
- M.2.4.** [RFP] Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract. However, if the resulting contract contains a clause providing for price reduction for defective cost or pricing data, the contract price will be subject to reduction if cost or pricing data furnished is incomplete, inaccurate or not current.
- M.2.5.** [RFP] The Government may determine that an offer is unacceptable if the prices proposed are materially unbalanced between line items or sub-line items. An offer is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the offer will result in the lowest overall cost to the Government, even though it may be the low evaluated offer, or if it is so unbalanced as to be tantamount to allowing an advance payment.

M.3 [RFP] SOURCE SELECTION PROCESS

- M.3.1.** [RFP] The Government shall conduct a formal source selection using the following process:
- M.3.1.1.** [A011] Proposal Evaluation: Upon receipt, the Government will review proposals for compliance with the solicitation, focusing on the instructions set forth in [Section L](#), Instructions, Conditions, and Notices to Offerors. Following this initial review, an in-depth evaluation of proposals meeting the parent craft definition set forth in [C.3.2](#) will be performed. Qualifying proposals (see M.4.1) will then be further evaluated for award with or without discussions, at the discretion of the Government.
- M.3.1.2.** [RFP] Contract Award: Within the best value continuum, the Government will employ a tradeoff process of cost or price and non-cost/price factors ([FAR 15.101-1](#)) in evaluating the proposals submitted.

M.4 [RFP] EVALUATION

- M.4.1.** [A013] All proposals will be evaluated, based upon the proposal's Volume I - Parent Craft Design, to ensure that the parent craft meets the definition contained in [C.3.2](#). Any proposal which does not meet these requirements will be excluded from further consideration for award. If a proposal has been eliminated from further consideration for award, the Contracting Officer will notify any affected offeror in writing not later than 30 days after the proposal due date.
- M.4.2.** [A011] Each proposal will be evaluated to assess the Offeror's ability to design, construct and deliver the Fast Response Cutter – B Class (FRC-B) in accordance with the Government's requirements. Proposals will be evaluated for risk as well as ability to design, construct, and deliver the FRC-B class in accordance with the Government's requirements. Proposals will not be scored nor ranked. Proposals will be evaluated on the basis of both non-price and price areas as discussed in this section.

d. [RFP] Management

e. [RFP] Technical

f. [RFP] Price

M.4.3. [RFP] Management and Technical are equal in importance, but each are significantly more important than price. When combined, management and technical are significantly more important than price.

M.4.4. [A011] The following is a description of the evaluation of proposals under each factor. Note that for Management and Technical, the Government will evaluate and rate the proposals for risk as well as assigning a technical rating. The Government will consider price/cost risk as noted under M.4.4.3.1.4.

M.4.4.1. [A011] FACTOR 1 – MANAGEMENT

M.4.4.1.1. [A011] The Offeror's Management proposal for the FRC-B will be evaluated for risk. The risk rating assigned will reflect the Government's confidence in the offeror's ability to successfully perform the management effort described in its proposal.

M.4.4.1.2. [A011] The Offeror's Management proposal for the FRC-B will also be evaluated based on the following 4 sub-factors, listed in descending order of importance:

M.4.4.1.2.1. [A011] **Sub-Factor 1 – Production Capability.** The evaluation will assess the Offeror's ability to meet the Government's required schedule.

M.4.4.1.2.2. [A013] **Sub-Factor 2 – Past Performance.** Level of confidence in the Offeror's ability to successfully perform this contract.

M.4.4.1.2.3. [A011] **Sub-Factor 3 – Past Experience.** The evaluation will assess the degree to which the Offeror has prior experience relevant to this project.

M.4.4.1.2.4. [A011] **Sub-Factor 4 – Project Organization & Management.** Offers will be evaluated to assess the overall effectiveness of the proposed project organization and management.

M.4.4.2. [A011] FACTOR 2 – TECHNICAL

M.4.4.2.1. [A011] The Offeror's Technical proposal for the FRC-B will be evaluated for risk. The risk rating assigned will reflect the Government's confidence in the offeror's ability to successfully perform the technical effort described in its proposal.

M.4.4.2.2. [A011] The Offeror's Technical proposal will also be evaluated as a measure of merit and the Government's confidence in the Offeror's ability to meet the RFP requirements, based on the following subfactors. All four subfactors are equal in importance.

M.4.4.2.2.1. [A014] **Sub-Factor 1 – Mission Effectiveness** The evaluation will assess the functionality of the FRC-B arrangements, the ability to

effectively conduct missions, ability to meet acceleration, deck wetness, and slamming limits, and endurance requirements.

M.4.4.2.2.2. [A011] **Sub-Factor 2 – Cutter Boat Launch & Recovery** The evaluation will assess how the FRC-B will safely and efficiently launch and recover the Cutter boat in required sea states.

M.4.4.2.2.3. [A011] **Sub-Factor 3 – Performance, Including Flank Speed** The evaluation will assess how the FRC-B will meet the varying speed requirements.

M.4.4.2.2.4. [A011] **Sub-Factor 4 – Transition from Parent Craft to FRC-B** The evaluation will assess the technical feasibility to transition from the Parent Craft design to an FRC-B design that meets the requirements for ABS classification.

M.4.4.3. [RFP] FACTOR 3 – PRICE

M.4.4.3.1. [A011] Price will be evaluated for completeness, price reasonableness, cost realism and unbalanced pricing. Proposals will not be scored, ranked, nor rated. Price for all Offerors may be adjusted in accordance with [FAR 52.219-23](#) Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns, incorporated in [Section I.1](#).

M.4.4.3.1.1. [RFP] Completeness is compliance with the price proposal instructions in [Section L](#).

M.4.4.3.1.2. [RFP] Price reasonableness will be established by competition and determined primarily by comparison with other offers submitted. The prices may also be compared with the Independent Government Cost Estimate (IGCE).

M.4.4.3.1.3. [RFP] Unbalanced Pricing will be established through the application of price analysis techniques. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated and poses an unacceptable risk to the Government. The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or sub-line items.

M.4.4.3.1.4. [A011] Price will also be evaluated for the financial risk (cost realism) associated with the multiple elements and variables of building to a modified parent craft design with the potential for variable outyear quantities and the impact those variables introduce into the firm-fixed price options, specifically as it relates to workload forecast, application of overhead and learning curve impact with a variation in option quantities (options for 4 hulls or 6 hulls).

M.4.4.3.2. [A011] Deleted.

M.4.4.3.3. [A013] Prior to addition of any applicable evaluation factors, Total Offered Price (TOP) shall be calculated utilizing the following formula:

0001 + 0002 + 0003 + 0004 + 0005 + 0006 +
 0007A + 0007B + 0007D + 0007E + 0007F +
 0008A + 0008B + 0008D + 0008E + 0008F +
 0010 + 0011 +
 (3)(0012A + 0012B + 0012C + 0012D + 0012E + 0012F +
 0012G + 0012H + 0012I + 0012J + 0012K + 0012L + 0012M) +
 (0.7) (0013A + 0013B + 0013D + 0013E + 0013F) +
 (0.3) (0014A + 0014B + 0014D + 0014E + 0014F) +
 (3)(0016A + 0016B + 0016C + 0016D + 0016E + 0016F +
 0016G + 0016H + 0016I + 0016J + 0016K + 0016L + 0016M) +
 (0.7)(0017A + 0017B + 0017D + 0017E + 0017F) +
 (0.3) (0018A + 0018B + 0018D + 0018E + 0018F) +
 (3)(0020A + 0020B + 0020C + 0020D + 0020E + 0020F +
 0020G + 0020H + 0020I + 0020J + 0020K + 0020L + 0020M) +
 (0.7)(0021A + 0021B + 0021D + 0021E + 0021F) +
 (0.3)(0022A + 0022B + 0022D + 0022E + 0022F) +
 (3)(0024A + 0024B + 0024C + 0024D + 0024E + 0024F +
 0024G + 0024H + 0024I + 0024J + 0024K + 0024L + 0024M) +
 (0.7)(0025A + 0025B + 0025D + 0025E + 0025F) +
 (0.3)(0026A + 0026B + 0026D + 0026E + 0026F) +
 (3)(0028A + 0028B + 0028C + 0028D + 0028E + 0028F +
 0028G + 0028H + 0028I + 0028J + 0028K + 0028L + 0028M) +
 (0.7)(0029A + 0029B + 0029D + 0029E + 0029F) +
 (0.3)(0030A + 0030B + 0030D + 0030E + 0030F) +
 (3)(0032A + 0032B + 0032C + 0032D + 0032E + 0032F +
 0032G + 0032H + 0032I + 0032J + 0032K + 0032L + 0032M) +
 (0.167)(0009+ 0015 + 0019 + 0023 + 0027 + 0031)

- M.4.4.3.3.1.** [A013] Numbers in the form of 000X or 00XX (with or without Alpha characters following them) represent the Total Extended Price for CLIN or Sub-CLIN numbers from the offeror's Section B submitted with the price proposal.
- M.4.4.3.3.2.** [A013] Cost plus Fixed Fee CLIN: Will be calculated as Fixed Fee.
- M.4.4.3.3.3.** [A013] Ship construction CLINs: The factors (0.70 and 0.30) reflects the Coast Guard's current estimate of the likelihood that those CLINs will be exercised.
- M.4.4.3.3.4.** [A013] Insurance Spares CLINs: The factor (3) reflects the Coast Guard's ability to exercise any of those sub-CLINs up to three times each.
- M.4.4.3.3.5.** [A013] RDLP CLINs: The factor (0.167) reflects the Coast Guard's intention to only exercise one of the six CLINs.
- M.4.4.3.4.** [RFP] Note that a grouping such as (0016A+0016B+0016D+0016E+0016F)(6) represents the buy of six cutters under that CLIN and NOT a buy of 36 cutters under that CLIN. In the same manner (0032A+0032B+0032D+0032E+0032F)(4) represents a buy of 4 cutters.
- M.4.4.3.5.** [A011] Deleted.

- M.4.4.3.6.** [RFP] Total Evaluated Price (TEP) will consist of the TOP adjusted in accordance with [FAR 52.219-23](#) Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns, and [52.219-4](#) Notice of Price Evaluation for HUBZone Small Business Concerns, incorporated in Section I.1, if applicable.

M.5 [RFP] [FAR 52.217-5](#) EVALUATION OF OPTIONS (JUL 1990)

- M.5.1.** [RFP] Except when it is determined in accordance with [FAR 17.206\(b\)](#) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

M.6 [A011] [HSAR 3052.216-70](#) EVALUATION OF OFFERS SUBJECT TO AN ECONOMIC PRICE ADJUSTMENT CLAUSE (JUNE 2006)

- M.6.1.** [A011] Offers shall be evaluated without adding an amount for an economic price adjustment. Offers may be rejected which: (1) increase the stipulated ceiling; (2) limit the downward adjustment; or (3) delete the economic price adjustment clause. If the offer stipulates a ceiling lower than that included in the solicitation, the lower ceiling will be incorporated into any resulting contract.

M.7 [A011] [FAR 52.252-1](#) SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

- M.7.1.** [A011] This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The Offeror is cautioned that the listed provisions may include blocks that must be completed by the Offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the Offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at these addresses:

<http://www.arnet.gov/far/>

http://www.uscg.mil/hq/cg-85/acquisition_regulations.htm#DHS

Part III – List of Documents, Exhibits, and Other Attachments
Section J: List of Attachments

ATTACHMENT 1	Terms/Definitions
ATTACHMENT 2:	Circular of Requirements
ATTACHMENT 3:	CDRLs/DIDs
ATTACHMENT 4:	External References List
ATTACHMENT 5	Contract Work Breakdown Structure
ATTACHMENT 6:	Government Furnished Information
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Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 1: Terms and Definitions

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SECTION 1. [RFP] Terms and Definitions**1-1 [RFP] General**

1-1.1 [RFP] These terms and references apply throughout all sections of the RFP.

1-2 [RFP] Terms

1-2.1 [RFP] Wherever such terms as "as approved", "for approval", "approval", "satisfactory to" or "as directed" are used without further qualification, the decision of the Contracting Officer is intended.

1-2.2 [RFP] The term "construction" means the construction of the FRC-B to meet the requirements identified in this Circular of Requirements.

1-2.3 [RFP] The term "Regulatory Body" includes USCG, FDA, USPHS, OSHA, FCC, and any other Government agency which normally has oversight of the construction of a ship as required by the federal law or specified herein.

1-3 [RFP] Definitions

1-3.1 [RFP] 3D TDP means 3-Dimensional Technical Data Package.

1-3.2 [RFP] ABS is the American Bureau of Shipping.

1-3.3 [RFP] ABMA is the American Bearing Manufacturers Association.

1-3.4 [RFP] ABYC is the American Boat and Yacht Council.

1-3.5 [RFP] ACA means Australian Communications Authority.

1-3.6 [RFP] ACB is the Allocated Configuration Baseline.

1-3.7 [RFP] AC&I is Acquisition Construction and Improvements.

1-3.8 [RFP] ACL is Access Control List.

1-3.9 [RFP] ACN means Activity Control Number.

1-3.10 [RFP] ACO is Administrative Contracting Officer.

1-3.11 [RFP] AECMA is the European Association of Aerospace Industries.

1-3.12 [RFP] AEL means Allowance Equipage List.

1-3.13 [RFP] AES is Advanced Encryption Standard.

1-3.14 [RFP] AFFF is Aqueous Film Forming Foam.

1-3.15 [RFP] AGC is Automatic Gain Control.

1-3.16 [RFP] AGM means Absorbed Glass-Mat.

1-3.17 [RFP] AGMA is the American Gear Manufacturers Association.

1-3.18 [RFP] AIS means Automated Information System.

1-3.19 [RFP] AIS/BFT means Automatic Identification System / Blue Forces Tracking.

1-3.20 [RFP] AME means Amplitude Modulation Equivalent.

1-3.21 [RFP] AMIO is Alien Migrant Interdiction Operations.

1-3.22 [RFP] AMR is Auxiliary Machinery Room.

1-3.23 [RFP] ANNLY is Annually.

- 1-3.24 [RFP] ANSI is the American National Standards Institute.
- 1-3.25 [RFP] A_o is the Operational Availability.
- 1-3.26 [RFP] APCO is the Association of Public-Safety Communications Officials.
- 1-3.27 [RFP] APL means Allowance Parts List.
- 1-3.28 [RFP] ARI is the Air Conditioning and Refrigeration Institute.
- 1-3.29 [RFP] ARP is Address Resolution Protocol.
- 1-3.30 [RFP] ARPA means Automatic RADAR Plotting Aid.
- 1-3.31 [RFP] ASHRAE is the American Society of Heating, Refrigeration, and Air Conditioning Engineers.
- 1-3.32 [RFP] ASME is the American Society of Mechanical Engineers.
- 1-3.33 [RFP] ASNT is the American Society for Nondestructive Testing.
- 1-3.34 [RFP] ASREQ means As Required.
- 1-3.35 [RFP] ASTM is the American Society for Testing and Materials.
- 1-3.36 [RFP] ATE means Automatic Test Equipment.
- 1-3.37 [RFP] BERPs means Bolted Equipments Removal Plates.
- 1-3.38 [RFP] BICSI is Building Industry Consulting Service International, a professional association supporting the information transport systems industry with information, education, and knowledge assessment for individuals and companies.
- 1-3.39 [RFP] BLS means Bureau of Labor Statistics.
- 1-3.40 [RFP] BSB is a Raster Chart Format.
- 1-3.41 [RFP] BSP British Standard Thread.
- 1-3.42 [RFP] BSMI means The Bureau of Standards, Metrology and Inspection.
- 1-3.43 [RFP] BT means Builders At-Sea Trials.
- 1-3.44 [RFP] BT means Boarding Team.
- 1-3.45 [RFP] BWI means Boating While Intoxicated.
- 1-3.46 [RFP] C2 means Command and Control.
- 1-3.47 [RFP] C2CEN means Command and Control Center.
- 1-3.48 [RFP] C4ISR is Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance equipment or systems.
- 1-3.49 [RFP] CAGE means Commercial and Government Entity.
- 1-3.50 [RFP] CAD means Computer Assisted Drawing.
- 1-3.51 [A009] CAMS means Communications Area Master Station.
- 1-3.52 [A009] CAS means Cost Accounting Standards.
- 1-3.53 [A009] CBT means Computer Based Training.
- 1-3.54 [A009] CCCS means Central Casualty Control Station.
- 1-3.55 [A009] CCMP means Cutter Class Maintenance Plan.

- 1-3.56 [A009] CCOL means Compartment Check-Off List.
- 1-3.57 [A009] CCR means Central Contractor Registration.
- 1-3.58 [A009] CCTV means Closed Circuit Television.
- 1-3.59 [A009] CDD means Cutter Delivery Date.
- 1-3.60 [A009] CDMA means Code Division Multiple Access.
- 1-3.61 [A009] CDMD-OA means Configuration Data Managers Database-Open Architecture.
- 1-3.62 [A009] CDR means Critical Design Review.
- 1-3.63 [A009] CDRL means Contract Data Requirements List.
- 1-3.64 [A009] CE means Conformité Européenne.
- 1-3.65 [A009] CEN means the European Committee for Standardization.
- 1-3.66 [A009] CENTCOM means U. S. Central Command.
- 1-3.67 [A009] CEU means Control Electronics Unit.
- 1-3.68 [A009] CFE means Contractor Furnished Equipment. - Items of equipment provided by the Contractor as required to meet the contractual obligations.
- 1-3.69 [A009] CFI means Contractor Furnished Information. - Information that the Contractor provides to the Coast Guard, normally in the form of publications, documents or drawings and in accordance with the Contract Data Requirements List.
- 1-3.70 [A009] CFM means Contractor Furnished Material. - Material that is Contractor property which may be incorporated into or attached to an end item to be delivered under a contract and/or which may be consumed in the performance of a contract.
- 1-3.71 [A009] CFR means Code of Federal Regulations.
- 1-3.72 [A009] CG means Coast Guard.
- 1-3.73 [A009] CGDN means Coast Guard Data Network.
- 1-3.74 [A009] CGDN+ means Coast Guard Data Network Plus.
- 1-3.75 [A009] CGSW means Coast Guard Standard Workstation.
- 1-3.76 [A009] CHAP is an authentication protocol frame format.
- 1-3.77 [A009] CHS is the Canadian Hydrographic Service.
- 1-3.78 [A009] CIB means Cutter Information Book.
- 1-3.79 [A009] CIFD means Configuration Item Functional Description.
- 1-3.80 [A009] CIFS is Common Internet File System.
- 1-3.81 [A009] CILRU means Configuration Item Line Replaceable Unit.
- 1-3.82 [A009] CLIN means Contract Line Item Number
- 1-3.83 [A009] CM means Configuration Management.
- 1-3.84 [A009] CM means Corrective Maintenance.
- 1-3.85 [A009] CMP means Configuration Management Plan.

- 1-3.86 [A009] CNS means Chinese National Standard.
- 1-3.87 [A009] CNSS is the Committee on National Security Systems.
- 1-3.88 [A009] CO is Commanding Officer.
- 1-3.89 [A009] COE means Common Operating Environment.
- 1-3.90 [A009] COLREGS means the International Regulations for Avoiding Collisions at Sea.
- 1-3.91 [A009] COMARPA is an application within SCCS.
- 1-3.92 [A009] COMDAC-INS means Command Data And Control Integrated Navigation Segment.
- 1-3.93 [A009] COMDDC is an application within SCCS.
- 1-3.94 [A009] COMRIC is an application within SCCS.
- 1-3.95 [A009] COMRIP is an application within SCCS.
- 1-3.96 [A009] COMSATCOM is Commercial Satellite Communications.
- 1-3.97 [A009] COR means Circular of Requirements.
- 1-3.98 [A009] COR means Contracting Officer's Representative.
- 1-3.99 [A009] COTR means Contracting Officers Technical Representative.
- 1-3.100 [A009] COTS means Commercial Off The Shelf.
- 1-3.101 [A009] The Contractor is the firm which holds the prime contract with the Coast Guard for the design and construction of the FRC-B.
- 1-3.102 [A009] CPIR means Contract Problem Identification Reports.
- 1-3.103 [A009] CPS means Collision Protection System.
- 1-3.104 [A009] CPVC is Chlorinated Poly (Vinyl Chloride).
- 1-3.105 [A009] CRES means Corrosion Resistant Steel.
- 1-3.106 [A009] Critical Piping Systems include: fuel oil, lube oil, bilge, ballast, fire main.
- 1-3.107 [A009] CSA means Configuration Status Accounting.
- 1-3.108 [A009] CSG means Carrier Strike Group.
- 1-3.109 [A009] CSMA/CD means Carrier Sense Multiple Access with Collision Detection.
- 1-3.110 [A009] CWBS means Contract Work Breakdown Structure.
- 1-3.111 [A009] DAC means Days after Contract Award.
- 1-3.112 [A009] DAOE means Days after Option Exercised.
- 1-3.113 [A009] DAPH means Days After Previous Hull.
- 1-3.114 [A009] DARC means Days after Receipt of Comments.
- 1-3.115 [A009] DB means Dry Bulb.
- 1-3.116 [A009] dBA means A-Weighted Sound Level.
- 1-3.117 [A009] dBC means C-Weighted Sound Level.
- 1-3.118 [A009] DC means Damage Control.

- 1-3.119 [A009] DCB is the Development Configuration Baseline.
- 1-3.120 [A009] DCC means Damage Control Central.
- 1-3.121 [A009] DCM means Design Criteria Manual for Surface Ships of the United States Navy.
- 1-3.122 [A009] DCN means Design Change Notice.
- 1-3.123 [A009] DCWE means Design and Construction Weight Estimates.
- 1-3.124 [A009] DCWR means Design and Construction Weight Reports.
- 1-3.125 [A009] DDS means Design Data Sheets.
- 1-3.126 [A009] DES-CFB is a Digital Encryption Standard protocol.
- 1-3.127 [A009] DES-OFB is a Digital Encryption Standard protocol.
- 1-3.128 [A009] DGPS means Differential Global Positioning System.
- 1-3.129 [A009] DHCP is Dynamic Host Configuration Protocol.
- 1-3.130 [A009] DHS is the U.S. Department of Homeland Security.
- 1-3.131 [A009] DIACAP means Department of Defense Information Assurance Certification and Accreditation Process.
- 1-3.132 [A009] DID means Data Item Description.
- 1-3.133 [A009] DIM means Distributed Isolation Material.
- 1-3.134 [A009] DISA means Defense Information Systems Agency.
- 1-3.135 [A009] DISN is the Defense Information System Network.
- 1-3.136 [A009] D-Level means Depot Level.
- 1-3.137 [A009] DLSC means Defense Logistics Services Center.
- 1-3.138 [A009] DMSMS means Diminishing Manufacturing Sources/Material Shortages.
- 1-3.139 [A009] DNC means Digital Nautical Chart.
- 1-3.140 [A009] DNS means Domain Name System.
- 1-3.141 [A009] DNV is Det Norske Veritas (Classification Society).
- 1-3.142 [A009] DOD is the Department of Defense.
- 1-3.143 [A009] DPA is Digi Port Authority.
- 1-3.144 [A009] DPACDD means Days Prior to ACDD.
- 1-3.145 [A009] DPCCR means the Days Prior to Critical Design Review.
- 1-3.146 [A009] DPM means Design Practices and Criteria Manual for Air Conditioning, Ventilation, and Heating of Surface Ships.
- 1-3.147 [A009] DPPRR means the Days Prior to Production and Readiness Review.
- 1-3.148 [A009] DPST means Double Pole, Single Throw.
- 1-3.149 [A009] DSAWG is the DISN Security Accreditation Working Group.
- 1-3.150 [A009] DSC means Digital Selective Calling.
- 1-3.151 [A009] DSE means Digital Selective Calling – Extended.

- 1-3.152 [A009] DT means Destructive Testing.
- 1-3.153 [A009] DTD means Document Type Definition.
- 1-3.154 [A009] DTMF means Dual Tone Multi Frequency.
- 1-3.155 [A009] DVB means Digital Video Broadcasting.
- 1-3.156 [A009] DVL means Digital Voice Logger.
- 1-3.157 [A009] DWP means the Destructive Weather Plan.
- 1-3.158 [A009] EB means Electric Boat.
- 1-3.159 [A009] ECCM means Electronic Counter-Counter-Measure.
- 1-3.160 [A009] ECDIS means Electronic Chart Display and Information System.
- 1-3.161 [A009] ECINS means Electronic Charting and Integrated Navigation System.
- 1-3.162 [A009] ECP means Engineering Change Proposal.
- 1-3.163 [A009] ECR means Engineering Change Request.
- 1-3.164 [A009] ECS means Electronic Chart Systems.
- 1-3.165 [A009] ECU means Electronic Control Unit.
- 1-3.166 [A009] EDFP means Engineering Data for Provisioning.
- 1-3.167 [A009] EEBD means Emergency Escape Breathing Devices.
- 1-3.168 [A009] EIAC means End Item Acronym Code.
- 1-3.169 [A009] EIRP means Effective Isotropic Radiated Power.
- 1-3.170 [A009] ELC Engineering Logistics Support Center.
- 1-3.171 [A009] ELINT means Electronic Intelligence.
- 1-3.172 [A009] ELMR means Enterprise Land Mobile Radio.
- 1-3.173 [A009] ELT means Enforcement of Laws and Treaties.
- 1-3.174 [A009] EMC is Electro-Magnetic Compatibility.
- 1-3.175 [A009] EMCON is Emanation Control Limited.
- 1-3.176 [A009] EMI means Electromagnetic Interference.
- 1-3.177 [A009] EMS means Emergency Medical Services.
- 1-3.178 [A009] EMT means Emergency Medical Technician.
- 1-3.179 [A009] EO means Enabling Objective.
- 1-3.180 [A009] EO-IR means Electronic Optical – Infrared.
- 1-3.181 [A009] EOM means Engineer’s Operating Manual.
- 1-3.182 [A009] EOSL means End of Service Life.
- 1-3.183 [A009] EOW means Engineering Officer of the Watch.
- 1-3.184 [A009] EPA is the Environmental Protection Agency.
- 1-3.185 [A009] EPIRB means Emergency Position Indicating Radio Beacon.
- 1-3.186 [A009] EPLA means Engineering Plant Load Analysis.

- 1-3.187 [A009] EPO is the Engineering Petty Officer.
- 1-3.188 [A009] EPSS means Electronic Performance Support System.
- 1-3.189 [A009] ESD means Electronic Support Detachment.
- 1-3.190 [A009] ESWBS means Expanded Ship Work Breakdown Structure.
- 1-3.191 [A009] ETOM means Electronics Technician Operating Manual.
- 1-3.192 [A009] ETP means Electronic Technical Publications.
- 1-3.193 [A009] EVM means Earned Value Management.
- 1-3.194 [A009] EVMS means Earned Value Management System.
- 1-3.195 [A009] FAC means Final Acceptance Trials.
- 1-3.196 [A009] FAM means Familiarization Training.
- 1-3.197 [A009] FAQ means Frequently Asked Question.
- 1-3.198 [A009] FAR means Federal Acquisition Regulation.
- 1-3.199 [A009] FAS means Fueling At Sea.
- 1-3.200 [A009] FAT means Final Acceptance Trials.
- 1-3.201 [A009] FCB means Functional Configuration Baseline.
- 1-3.202 [A009] FCC is the Federal Communications Commission.
- 1-3.203 [A009] FDA is the U.S. Food and Drug Administration.
- 1-3.204 [A009] FDR means Frequency Domain Reflectometry.
- 1-3.205 [A009] FLOCS means Fast Lube Oil Change System.
- 1-3.206 [A009] FLPPP means the Flooding Prevention and Protection Plan.
- 1-3.207 [A009] FMEA means Failure Modes and Effects Analysis.
- 1-3.208 [A009] FMS means Foreign Military Sales.
- 1-3.209 [A009] FOB means Free On Board.
- 1-3.210 [A009] FPPP means the Fire Prevention and Protection Plan.
- 1-3.211 [A009] FRC-B is the Coast Guard designation for Fast Response Cutter, B Class.
- 1-3.212 [A009] FRP means Fiber Reinforced Plastic.
- 1-3.213 [A009] FWR means Final Weight Report.
- 1-3.214 [A009] GFCI means Ground Fault Circuit Interrupter.
- 1-3.215 [A009] GFE means Government Furnished Equipment.
- 1-3.216 [A009] GFI means Government Furnished Information.
- 1-3.217 [A009] GFM means Government Furnished Material. - Material that is Coast Guard property which may be incorporated into and/or attached to an end item to be delivered under a contract or which may be consumed in the performance of a contract.
- 1-3.218 [A009] GFP means Government Furnished Property.
- 1-3.219 [A009] GMDSS means Global Maritime Distress and Safety System.

- 1-3.220 [A009] GPS means Global Positioning System.
- 1-3.221 [A009] GSA is the General Services Administration.
- 1-3.222 [A009] GUCL means General Use Consumable List.
- 1-3.223 [A009] GUI means Graphic User Interface.
- 1-3.224 [A009] The Government is the United States Government.
- 1-3.225 [A009] H₂S means Hydrogen Sulfide.
- 1-3.226 [A009] HBCU means Historically Black Colleges and Universities.
- 1-3.227 [A009] HCLC means Heating and Cooling Load Calculations.
- 1-3.228 [A009] HCU means Hand Control Unit.
- 1-3.229 [A009] HDSL means High bit-rate Digital Subscriber Line.
- 1-3.230 [A009] HDT is the NMEA 0183 sentence for True Heading.
- 1-3.231 [A009] HERF means Hazards of Personnel, Electromagnetic Radiation to Fuels.
- 1-3.232 [A009] HERO means Hazards of Personnel, Electromagnetic Radiation to Ordnance.
- 1-3.233 [A009] HERP means Hazards of Personnel, Electromagnetic Radiation to Personnel.
- 1-3.234 [A009] HF means High Frequency.
- 1-3.235 [A009] HF-ALE means High Frequency – Automated Link Establishment.
- 1-3.236 [A009] HFC means Hydrofluorocarbon.
- 1-3.237 [A009] HFE means Human Factors Engineering.
- 1-3.238 [A009] HM&E means Hull, Mechanical, Electrical, and Ordnance.
- 1-3.239 [A009] HMI means Human Machine Interface.
- 1-3.240 [A009] HPFRL means High Pressure Fire Retardant Laminate.
- 1-3.241 [A009] HPU means Hydraulic Power Unit.
- 1-3.242 [A009] HSC Code is the IMO High Speed Craft Code.
- 1-3.243 [A009] HSNC Rules is the ABS Guide for Building and Classing High Speed Naval Craft.
- 1-3.244 [A009] HTML means Hypertext Markup Language.
- 1-3.245 [A009] HVAC means Heating, Ventilation, and Air Conditioning.
- 1-3.246 [A009] HVACDM means HVAC Systems Duct Design.
- 1-3.247 [A009] HVACMF means HVAC Duct Construction Standards Metal and Flexible.
- 1-3.248 [A009] IA means Information Assurance.
- 1-3.249 [A009] IACS is the International Association of Classification Societies, which consists of 10 member societies (ABS, BV, CCS, DNV, GL, KR, LR, NK, RINA, and RS) and one associate (IRS).
- 1-3.250 [A009] IAW means In Accordance With.

- 1-3.251 [A009] IBR means Integrated Baseline Review.
- 1-3.252 [A009] IC means Interior Communication.
- 1-3.253 [A009] ICAPS means Interactive Computer Aided Provisioning System.
- 1-3.254 [A009] ICD means Interface Control Drawing.
- 1-3.255 [A009] ICP means Inventory Control Point.
- 1-3.256 [A009] ICS means Industrial Controls and Systems.
- 1-3.257 [A009] ICSP means Interim Contractor Support Plan.
- 1-3.258 [A009] ICSS means Interim Contractor Supply Support.
- 1-3.259 [A009] ICW means Interactive Courseware.
- 1-3.260 [A009] IEEE is the Institute of Electrical and Electronics Engineers.
- 1-3.261 [A009] IES is the Illuminating Engineering Society.
- 1-3.262 [A009] IETM means Interactive Electronic Technical Manual.
- 1-3.263 [A009] IETP means Integrated Electronic Technical Publication.
- 1-3.264 [A009] IFF means Identification Friend or Foe.
- 1-3.265 [A009] IIPS means Integrated System Model Implementation Plan and Schedule.
- 1-3.266 [A009] ILS means Integrated Logistics Support.
- 1-3.267 [A009] ILSMT means Integrated Logistics Support Management Team.
- 1-3.268 [A009] IMI means Interactive Multimedia Instruction.
- 1-3.269 [A009] IMO is the International Maritime Organization.
- 1-3.270 [A009] IMP means Integrated Master Plan.
- 1-3.271 [A009] IMS means Integrated Master Schedule.
- 1-3.272 [A009] INCOs means Installation and Check Out Spares.
- 1-3.273 [A009] IPC Association Connecting Electronics Industries.
- 1-3.274 [A009] IPDE means Integrated Product Data Environment.
- 1-3.275 [A009] IPRs means In Process Reviews.
- 1-3.276 [A009] IPS means Iron Pipe Size.
- 1-3.277 [A009] IPT means In Plant Tests.
- 1-3.278 [A009] IPv6 is Internet Protocol version 6.
- 1-3.279 [A009] IR means Infrared.
- 1-3.280 [A009] IRS means Internal Revenue Service.
- 1-3.281 [A009] ISA is the Instrument Society of America.
- 1-3.282 [A009] ISB means Independent Side Band.
- 1-3.283 [A009] ISD means Instructional Systems Design.
- 1-3.284 [A009] ISDN means Integrated Services Digital Network.
- 1-3.285 [A009] ISI means Initial Safety Inspection.

- 1-3.286 [A009] ISM means Integrated System Model.
- 1-3.287 [A009] ISO means the International Organization for Standardization.
- 1-3.288 [A009] ISP means Integrated Support Plan.
- 1-3.289 [A009] ITI means Information Technology Integrator.
- 1-3.290 [A009] ITTC is the International Towing Tank Conference.
- 1-3.291 [A009] ITU-R means International Telecommunications Union – Recommendations.
- 1-3.292 [A009] JIC means Joint Industry Conference.
- 1-3.293 [A009] JITC is the Department of Defense Joint Interoperability Test Command.
- 1-3.294 [A009] JTA means Job and Task Analysis.
- 1-3.295 [A009] KG means Vertical Center of Gravity.
- 1-3.296 [A009] KVAR means Kilovolt Amp Reactive.
- 1-3.297 [A009] KVM means Keyboard/Video/Mouse.
- 1-3.298 [A009] KW means Kilowatt.
- 1-3.299 [A009] LAN means Local Area Network.
- 1-3.300 [A009] LBP means the Length Between Perpendiculars of the craft.
- 1-3.301 [A009] LCCE means Life Cycle Cost Estimate.
- 1-3.302 [A009] LCD means Liquid Crystal Display.
- 1-3.303 [A009] LCDD means Lead Cutter Delivery Date.
- 1-3.304 [A009] LCG means Longitudinals Centers of Gravity.
- 1-3.305 [A009] LCN means Logistics Control Numbers.
- 1-3.306 [A009] LCU means Laptop Control Unit.
- 1-3.307 [A009] LE means Law Enforcement.
- 1-3.308 [A009] LORA means Level of Repair Analysis.
- 1-3.309 [A009] LOS means Line of Sight.
- 1-3.310 [A009] LPI means Laminating Process Instruction.
- 1-3.311 [A009] LPC means Laminate Process Description.
- 1-3.312 [A009] LPD means Line Printer Daemon.
- 1-3.313 [A009] LRIP means Low Rate Initial Production.
- 1-3.314 [A009] LSA means Logistics Support Analysis.
- 1-3.315 [A009] LSAR means Logistics Support Analysis Record.
- 1-3.316 [A009] LSB means Lower Side Band.
- 1-3.317 [A009] MAC means Media Access Control.
- 1-3.318 [A009] MARAD is the Maritime Administration, U.S. Department of Transportation.
- 1-3.319 [A009] MARPOL means Marine Pollution Prevention.

- 1-3.320 [A009] MAT means Maintenance Augmentation Team.
- 1-3.321 [A009] MCC means Mission Criticality Code.
- 1-3.322 [A009] MCMS means Machinery Control Monitoring System.
- 1-3.323 [A009] MEA means Maintenance Engineering Analysis.
- 1-3.324 [A009] MECL means Master Equipment Configuration List.
- 1-3.325 [A009] MEDEVAC means Medical Evacuation.
- 1-3.326 [A009] MF means Medium Frequency.
- 1-3.327 [A009] MGS means Machine Gun System.
- 1-3.328 [A009] MICA means Management Information for Configuration Allowances.
- 1-3.329 [A009] MILSATCOM means Military Satellite Communications.
- 1-3.330 [A009] MLDT means Mean Logistics Delay Time.
- 1-3.331 [A009] MMR means Main Machinery Room.
- 1-3.332 [A009] MMSI means Maritime Mobile Service Identity.
- 1-3.333 [A009] MPC means Maintenance Procedure Card.
- 1-3.334 [A009] MPDS means Mobile Packet Data Service.
- 1-3.335 [A009] MPTD means Months Prior to Delivery.
- 1-3.336 [A009] MRI means Maintenance Requirement Index.
- 1-3.337 [A009] MIRR means Material Inspection and Receiving Report.
- 1-3.338 [A009] MSC means Maritime Safety Committee.
- 1-3.339 [A009] MSDS means Material Safety Data Sheets.
- 1-3.340 [A009] MSS is the Manufacturers Standardization Society of the Valves and Fittings Industry.
- 1-3.341 [A009] MTBCF means Mean Time Between Critical Failure.
- 1-3.342 [A009] MTBF means Mean Time Between Failure.
- 1-3.343 [A009] MTBOMF means Mean Time Between Operational Missions Failure.
- 1-3.344 [A009] MTHLY is Monthly.
- 1-3.345 [A009] MTL means Master Training List.
- 1-3.346 [A009] MTTR means Mean Time To Repair.
- 1-3.347 [A009] NAICS means North American Industry Classification System.
- 1-3.348 [A009] NAS means Network Attached Storage.
- 1-3.349 [A009] NAVSEA is the Headquarters of the Naval Sea Systems Command.
- 1-3.350 [A009] NAVTEX means Navigation Telex.
- 1-3.351 [A009] NDT means Non Destructive Testing.
- 1-3.352 [A009] NDI means Nautical Data International.
- 1-3.353 [A009] NEC means National Electrical Code.
- 1-3.354 [A009] NEMA is the National Electrical Manufacturers Association.

- 1-3.355 [A009] NICU means Copper Nickel.
- 1-3.356 [A009] NIMA is the National Imagery and Mapping Agency.
- 1-3.357 [A009] NIST is the National Institute of Standards and Technology.
- 1-3.358 [A009] NFPA is the National Fire Protection Association.
- 1-3.359 [A009] NFP(A) is the National Fluid Power Association.
- 1-3.360 [A009] NFS means Network File System.
- 1-3.361 [A009] NLRB means National Labor Relations Board.
- 1-3.362 [A009] NMEA is the National Marine Electronics Association.
- 1-3.363 [A009] NOAA is the National Oceanic and Atmospheric Administration.
- 1-3.364 [A009] NOR means Notice of Revision.
- 1-3.365 [A009] NPS is Nominal Pipe Size.
- 1-3.366 [A009] NPT is National Pipe Thread.
- 1-3.367 [A009] NR means Noise Reduction.
- 1-3.368 [A009] NRTL means Nationally Recognized Testing Laboratory.
- 1-3.369 [A009] NSA is the National Security Agency.
- 1-3.370 [A009] NSF is the National Sanitation Foundation.
- 1-3.371 [A009] NSN means National Stock Number.
- 1-3.372 [A009] NSTM means Naval Ships Technical Manual.
- 1-3.373 [A009] NTIA is the National Telecommunications Information Administration.
- 1-3.374 [A009] NTP means Network Time Protocol.
- 1-3.375 [A009] NTSC means National TV Standards Committee.
- 1-3.376 [A009] NUC means Not Under Command.
- 1-3.377 [A009] NVIC or NVC means USCG Navigation and Vessel Inspection Circular.
- 1-3.378 [A009] NVIS means Near-Vertical Incidence Skywave.
- 1-3.379 [A009] NVR means Naval Vessel Rules.
- 1-3.380 [A009] OBRP means On Board Repair Parts.
- 1-3.381 [A009] ODS means Ozone Depleting Substance.
- 1-3.382 [A009] OEM means Original Equipment Manufacturer.
- 1-3.383 [A009] OGA means Other Government Agency.
- 1-3.384 [A009] OJT means On the Job Training.
- 1-3.385 [A009] O-Level means Organizational-Level.
- 1-3.386 [A009] ONE/R means Once, and any time revisions are made.
- 1-3.387 [A009] OM&S means Operating Material and Spares.
- 1-3.388 [A009] OPAREA means Operational Area.
- 1-3.389 [A009] ORCA means Online Representations and Certifications Application.

- 1-3.390 [A009] OS means Operating Systems.
- 1-3.391 [A009] OSHA is the Occupational Safety and Health Administration.
- 1-3.392 [A009] OSI means Operating Space Item.
- 1-3.393 [A009] OTAR means Over the Air Re-Keying.
- 1-3.394 [A009] OTDR means Optical Time Domain Reflectometer.
- 1-3.395 [A009] PAC means Post Award Conference.
- 1-3.396 [A009] PAP is an authentication protocol frame format.
- 1-3.397 [A009] PAT means Preliminary Acceptance Trials.
- 1-3.398 [A009] PBX means Private Branch Exchange.
- 1-3.399 [A009] PCA means the Physical Configuration Audit.
- 1-3.400 [A009] PCAF means Primary Crew Assembly Facility.
- 1-3.401 [A009] PCB means the Product Configuration Baseline.
- 1-3.402 [A009] PCU means Power Control Unit.
- 1-3.403 [A009] PDCN means Provisioning Document Control Number.
- 1-3.404 [A009] PDP means Post Delivery Period.
- 1-3.405 [A009] PDR means Preliminary Design Review.
- 1-3.406 [A009] PDW means Personal Defense Weapon.
- 1-3.407 [A009] PFD means Personal Floatation Device.
- 1-3.408 [A009] PHS&T means Package Handling, Storage, and Transportation.
- 1-3.409 [A009] PKP is a fire extinguishing agent (Dry Chemical Potassium Bicarbonate).
- 1-3.410 [A009] PLCs means Programmable Logic Controllers.
- 1-3.411 [A009] PLICN means Provisioning Line Item Control Number.
- 1-3.412 [A009] PM means Preventative Maintenance.
- 1-3.413 [A009] PMG means Permanent Magnet Generator.
- 1-3.414 [A009] PMS means Preventive Maintenance System.
- 1-3.415 [A009] PO means Purchase Order.
- 1-3.416 [A009] POTS means Plain Old Telephone Service.
- 1-3.417 [A009] PPE means Personal Protective Equipment.
- 1-3.418 [A009] PPL means Provisioning Parts List.
- 1-3.419 [A009] PPP means Point-to-Point Protocol.
- 1-3.420 [A009] PQG means Performance Qualification Guide.
- 1-3.421 [A009] PRB means Post Retirement Benefits.
- 1-3.422 [A009] PRO is the Project Resident Office established by the Coast Guard at the Contractor's facility.
- 1-3.423 [A009] PSTN is the DSC position message.

- 1-3.424 [A009] PTD means Provisioning Technical Documentation.
- 1-3.425 [A009] PTDSS means Provisioning Technical Documentation Submission Schedule.
- 1-3.426 [A009] PTF means Poly Tube Fitting.
- 1-3.427 [A009] PTO means Power Take-Off.
- 1-3.428 [A009] PTT means Push To Talk.
- 1-3.429 [A009] PVC means Poly Vinyl Chloride.
- 1-3.430 [A009] PWCS means Ports, Waterways, and Coastal Security.
- 1-3.431 [A009] QPL means Qualified Parts List.
- 1-3.432 [A009] QPPCs means Quarterly Production Progress Conferences.
- 1-3.433 [A009] R&A means Rescue and Assistance.
- 1-3.434 [A009] RAID means Redundant Array Of Independent Disks.
- 1-3.435 [A009] RAM means Restricted in Ability to Maneuver.
- 1-3.436 [A009] RARP means Reverse Address Resolution Protocol.
- 1-3.437 [A009] RBS means Rated Breaking Strength.
- 1-3.438 [A009] RCM means Reliability Centered Maintenance.
- 1-3.439 [A009] RD means basic Rate of Data.
- 1-3.440 [A009] RDF means Radio Direction Finder.
- 1-3.441 [A009] RDLP means Reprocurement Data and Licensing Package.
- 1-3.442 [A009] RF means Radio Frequency.
- 1-3.443 [A009] RFC means Request For Comment.
- 1-3.444 [A009] RFD means Request For Deviation.
- 1-3.445 [A009] RFI means Radio Frequency Interference.
- 1-3.446 [A009] RFP means Rated Fatigue Pressure.
- 1-3.447 [A009] RFW means Request for Waiver.
- 1-3.448 [A009] RGB means Red Green Blue.
- 1-3.449 [A009] RIDCS means Rectangular Industrial Duct Construction.
- 1-3.450 [A009] RIPv2 means Routing Information Protocol version 2.
- 1-3.451 [A009] RISC means Reduced Instruction Set Computer.
- 1-3.452 [A009] RMA means Reliability, Maintainability, and Availability.
- 1-3.453 [A009] RMS means Route Mean Square.
- 1-3.454 [A009] RNIDCS means Round Industrial Duct Construction.
- 1-3.455 [A009] RO means Reverse Osmosis.
- 1-3.456 [A009] ROC means Remote Operated Console.
- 1-3.457 [A009] ROPs means Remote Operator Positions.
- 1-3.458 [A009] RP's means Review Points.

- 1-3.459 [A009] RPM means Rotations Per Minute.
- 1-3.460 [A009] RSP means Rated Static Pressure.
- 1-3.461 [A009] RSPs means Remote Speaker Positions.
- 1-3.462 [A009] SAE is the Society of Automotive Engineers.
- 1-3.463 [A009] SAN means Storage Area Network.
- 1-3.464 [A009] SAR means Search And Rescue.
- 1-3.465 [A009] SART means Search And Rescue Transponder.
- 1-3.466 [A009] SBU means Sensitive But Unclassified.
- 1-3.467 [A009] SCBA means Self Contained Breathing Apparatus.
- 1-3.468 [A009] SCCS means Shipboard Command and Control System.
- 1-3.469 [A009] SCS means System Control Station.
- 1-3.470 [A009] SCSI means Small Computer Serial Interface.
- 1-3.471 [A009] SEMP means System Engineering Master Plan.
- 1-3.472 [A009] SGA means Stabilized Gimbal Assembly.
- 1-3.473 [A009] SHP means Shaft Horse Power.
- 1-3.474 [A009] SI means International System of Units.
- 1-3.475 [A009] SIE means Special Inspection Equipment.
- 1-3.476 [A009] SILS means System Integrated Logistical Support.
- 1-3.477 [A009] SINGARS means Single Channel Ground and Airborne Radio System.
- 1-3.478 [A009] SINS means Scalable Integrated Navigation System.
- 1-3.479 [A009] SIPRNET means Secret [formerly Secure] Internet Protocol Router Network.
- 1-3.480 [A009] SIRVSS means Shipboard Infrared Visual Surveillance System.
- 1-3.481 [A009] SIU means System Interface Unit.
- 1-3.482 [A009] SMACNA means Sheet Metal and Air Conditioning Contractors National Association.
- 1-3.483 [A009] SMB is Server Message Block.
- 1-3.484 [A009] SMDR means Station Message Detail Recording.
- 1-3.485 [A009] SMEF means System Management & Engineering Facility.
- 1-3.486 [A009] SM&R means Source, Maintenance and Recoverability Code.
- 1-3.487 [A009] SMTP means Simple Mail Transfer Protocol.
- 1-3.488 [A009] SNAME is the Society of Naval Architects and Marine Engineers.
- 1-3.489 [A009] SNMP means Simple Network Management Protocol.
- 1-3.490 [A009] SNO means Statement of No Objection.
- 1-3.491 [A009] SOLAS is the International Convention for the Safety of Life at Sea.
- 1-3.492 [A009] SOP means Standard Operating Procedures.

- 1-3.493 [A009] SOVC means Statement of Voluntary Compliance.
- 1-3.494 [A009] SP3T means Single Pole, Triple Throw.
- 1-3.495 [A009] SPDT means Single Pole, Double Throw.
- 1-3.496 [A009] SPL means Sound Pressure Level.
- 1-3.497 [A009] SPTD means Supplemental Provisioning Technical Documentation.
- 1-3.498 [A009] SRDs means Selected Record Drawings.
- 1-3.499 [A009] SRI means Storeroom Items.
- 1-3.500 [A009] SS means Sea State.
- 1-3.501 [A009] SSA means Significant Single Amplitude.
- 1-3.502 [A009] SSDG means Ship's Service Diesel Generator.
- 1-3.503 [A009] SSH means Secure SHell.
- 1-3.504 [A009] SSI means Single Source Integrator.
- 1-3.505 [A009] SSPC means Society for Protective Coatings.
- 1-3.506 [A009] SSR means Surface Search Radar.
- 1-3.507 [A009] S&TE means Support and Test Equipment.
- 1-3.508 [A009] ST means Special Tooling.
- 1-3.509 [A009] Standards Bodies are entities that establish standards for the industry such as ABS, IEEE, ASTM, NFPA, ISA etc.
- 1-3.510 [A009] STE means Secure Terminal Equipment.
- 1-3.511 [A009] STEDS means Sensitive but Unclassified Tactical Information Exchange And Display System.
- 1-3.512 [A009] SVSS means Secure Voice Switchboard System.
- 1-3.513 [A009] SWBS means Ship Work Breakdown Structure.
- 1-3.514 [A009] Tactical – UHF means Tactical Ultra High Frequency.
- 1-3.515 [A009] Tactical – VHF means Tactical Very High Frequency.
- 1-3.516 [A009] TCG means Transverse Centers of Gravity.
- 1-3.517 [A009] TCP means Transmission Control Protocol.
- 1-3.518 [A009] TDI means Technical Data Index.
- 1-3.519 [A009] TDOP means Technical Data Organizational Plan.
- 1-3.520 [A009] TDP means Technical Data Package.
- 1-3.521 [A009] TDR means Time Domain Reflectometry.
- 1-3.522 [A009] TDS means Total Dissolved Solids.
- 1-3.523 [A009] TDSP means Training Development and Support Plan.
- 1-3.524 [A009] TDSR means Technical Data Status Report.
- 1-3.525 [A009] T&E means Test and Evaluation.
- 1-3.526 [A009] TEMA is the Tubular Exchanger Manufacturers Association.

- 1-3.527 [A009] TEMPEST is a codename referring to investigations and studies of compromising emanations.
- 1-3.528 [A009] TEPP is the Test Evaluation Program Plan.
- 1-3.529 [A009] The term "ton" as used in this Circular of Requirements means metric tonne (1000 kilograms) except as otherwise specified in sections pertaining to weight handling equipment.
- 1-3.530 [A009] TFTP means Trivial File Transfer Protocol.
- 1-3.531 [A009] THD means Total Harmonic Distortion.
- 1-3.532 [A009] TIMPC means Technical Information Management and Control Plan.
- 1-3.533 [A009] TIN means Taxpayer Identification Number.
- 1-3.534 [A009] TLL means Target Lat/Long.
- 1-3.535 [A009] TM means Technical Manual.
- 1-3.536 [A009] TMCR means Technical Manual Contract Requirements.
- 1-3.537 [A009] TOI means Target of Interest.
- 1-3.538 [A009] TPO means Terminal Performance Objectives.
- 1-3.539 [A009] TRS means Technical Repair Standard.
- 1-3.540 [A009] TSEC is the system for identifying the type and purpose of certain items of COMSEC material.
- 1-3.541 [A009] TTL means Transistor-Transistor Logic.
- 1-3.542 [A009] UDP means User Datagram Protocol.
- 1-3.543 [A009] UHF means Ultra High Frequency.
- 1-3.544 [A009] UHMW means Ultra High Molecular Weight.
- 1-3.545 [A009] UL is the Underwriters Laboratories.
- 1-3.546 [A009] ULSD means Ultra Low Sulphur Diesel.
- 1-3.547 [A009] USPHS is the United States Public Health Service.
- 1-3.548 [A009] UPS means Uninterruptible Power Supply.
- 1-3.549 [A009] USB means Universal Serial Bus.
- 1-3.550 [A009] USB means Upper Side Band.
- 1-3.551 [A009] USC means United States Code.
- 1-3.552 [A009] USCG is the United States Coast Guard.
- 1-3.553 [A009] USPHS is the United States Public Health Service, U.S. Department of Health and Human Services.
- 1-3.554 [A009] USSG means United States Steel Gauge.
- 1-3.555 [A009] UTP means Unshielded Twisted Pair.
- 1-3.556 [A009] U-Values means boundary transmission heat transfer coefficients for preparing the HVAC heating and cooling load calculations (HCLC).
- 1-3.557 [A009] UVT means Under Voltage Trips.

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- 1-3.558 [A009] VCG means Vertical Centers of Gravity.
- 1-3.559 [A009] VCHT means Vacuum sewage Collection, Holding, and Transfer system.
- 1-3.560 [A009] VDM is a NMEA 0183 AIS sentence.
- 1-3.561 [A009] VDU means Video Display Unit.
- 1-3.562 [A009] VECP means Value Engineering Change Proposals.
- 1-3.563 [A009] VHF means Very High Frequency.
- 1-3.564 [A009] VPF means Vector Product Format.
- 1-3.565 [A009] VoIP means Voice over Internet Protocol.
- 1-3.566 [A009] VRC means Voice Radio Circuit.
- 1-3.567 [A009] VRLA means Vent-Relief Lead Acid.
- 1-3.568 [A009] VSWR means Voltage Standing Wave Ratio.
- 1-3.569 [A009] WINS means Windows Internet Name Service.
- 1-3.570 [A009] WKLY is Weekly.
- 1-3.571 [A009] XHTML means the Extensible Hypertext Markup Language.
- 1-3.572 [A009] XML means eXtensible Markup Language.
- 1-3.573 [A009] XO is Executive Officer.
- 1-3.574 [A009] WMEC means USCG Medium Endurance Cutter

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 000 – General Guidance and Administration

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SECTION 041. [RFP] CONFIGURATION MANAGEMENT**041-1 [RFP] General**

- 041-1.1 [RFP] Configuration Management is an integral part of the system engineering process. The US Coast Guard uses a configuration-based, maintenance driven, centralized supply approach to obtain life-cycle supportability. This ensures all Integrated Logistics Support (ILS) elements are considered throughout the life-cycle of the FRC-B. The ILS program is described in COR SECTION 080.
- 041-1.2 [RFP] Configuration Management (CM) Program. A CM program shall be established and maintained throughout the performance period for the FRC-B contract that implements the guidance contained in [MIL-HDBK-61A](#) and [ANSI/EIA-649-A](#).
- 041-1.3 [RFP] CM Plan. The contractor shall develop a Configuration Management Plan (CMP) for establishing and maintaining the FRC-B baseline configurations ([CDRL 041-001](#)) in accordance with [MIL-HDBK-61A](#). The CMP shall describe the contractor's CM organization and shall identify contractor responsibilities in configuration planning, management, identification, control, status accounting, and verification and audit, to establish and maintain the functional, allocated, development, and product baselines. The CMP shall describe how the contractor will ensure subcontractor / vendor compliance with the CM requirements of the contract.
- 041-1.4 [RFP] Configuration Status Accounting. As part of the CM Program, Configuration Status Accounting (CSA) shall be conducted to capture and maintain FRC-B configuration information and ensure that current and historical configurations of the FRC-B and the FRC-B configuration information can be accurately determined throughout the performance period. CSA tasks shall be recorded in accordance with Table 7-3 of [MIL-HDBK-61A](#).
- 041-1.4.1 [A010] The Contractor shall maintain a Configuration Status Accounting (CSA) system in the US Navy's Configuration Data Managers Database-Open Architecture (CDMD-OA) application and report in accordance with [CDRL 041-002](#). The contractor is responsible for gaining access to the CDMD-OA website after Contract Award via the official CDMD-OA website www.cdmd.navy.mil. The contractor shall be responsible for obtaining the required certifications and user training for access and use of CDMD-OA.
- 041-1.4.2 [RFP] The CSA system shall be established prior to the Critical Design Review (CDR), maintained during lead ship construction, continue through the production contract, and shall provide all necessary information for a complete, accurate and verified "as delivered" configuration baseline for each FRC-B.
- 041-1.4.3 [RFP] The CSA system shall maintain change status for all Configuration Items and reflect the current system/equipment configuration and Engineering Change Proposal (ECP) approval and implementation status.
- 041-1.4.4 [RFP] Master Equipment Configuration List (MECL) reports described in COR Section 085-12 are outputs of the CSA system.
- 041-1.4.5 [RFP] On-site Validation. The contractor shall conduct a 100% physical site validation on all configuration items to ensure accuracy of information contained in the CSA database. The contractor shall use validation aides

generated from the CSA database. All configuration managed equipment shall have visible name plate data located in an accessible position on all installed equipment. The name plate data shall be easily read without the aid of any objects to enhance its visibility or clarity. Name plate data shall clearly state the type of equipment installed (noun name, nomenclature of equipment), make, model and/or serial number, manufacturer's name, date of manufacture, place of manufacture and National Stock Number (NSN) if available.

041-2 [RFP] Definitions, Abbreviations and Acronyms

- 041-2.1 [RFP] The definitions below and those cited in [DI-CMAN-81253A](#) shall be used to meet the requirements of the Circular of Requirements (COR).
- 041-2.2 [A013] Expanded Ship Work Breakdown Structure (ESWBS): An expansion of the SWBS to a five digit functional indenturing system that provided uniform, top-down breakdown by single digit indentured levels. The ESWBS defines and establishes the system boundaries, system descriptions, and functional nomenclature for all systems for each FRC-B.
- 041-2.3 [RFP] Selected Record Drawing: Selected Record Drawings are the Coast Guard approved drawings that are to be used as the ship construction drawings for follow-on FRC-Bs constructed under contract options. No departure from a Selected Record Drawing is permissible without specific written approval by the Contracting Officer.

041-3 [RFP] Configuration Baselines

- 041-3.1 [RFP] The Functional Configuration Baseline (FCB) consists of the FRC-B's technical, mission, operational (including availability) and functional requirements, interoperability and interface characteristics, and design constraints as contained in the FRC-B contract. The FCB will be established at contract award.
- 041-3.2 [RFP] The Allocated Configuration Baseline (ACB) formally breaks out the functional requirements identified in the FCB into more detailed functional requirements and interface characteristics that are allocated from those of the higher level Configuration Item (CI) for the System and major subsystems. The ACB shall represent the performance-oriented requirements from the FCB, how the contractor allocates their design characteristics to these performance-oriented requirements, and the verification required to demonstrate achievement of those specified characteristics.
- 041-3.3 [RFP] The Development Configuration Baseline (DCB) represents the approved "build to" technical data package for the initial FRC-Bs. The technical data package includes all the information that defines the configuration of the FRC-B. The DCB will be established, in phases, as a result of a design review of the technical data package by CG personnel. When the Contracting Officer has approved a deliverable, its contents become part of the DCB. The DCB is established when all deliverables associated with the design review, COR Section 068-2, have been approved.
- 041-3.4 [RFP] A Product Configuration Baseline (PCB) will be established upon approval of a Physical Configuration Audit (PCA) on the FRC-B designated by the Contracting Officer.

041-3.5 [RFP] Physical Configuration Audit (PCA). The Government will conduct a Physical Configuration Audit of the technical data as the last phase of the Preliminary Acceptance Trials (PAT) on the first FRC-B, and again on the FRC-B designated by the Contracting Officer. PAT is not complete for these cutters until all discrepancies resulting from the PCA have been resolved to the satisfaction of the Contracting Officer. The contractor shall make provisions for and support this effort, which is expected to last two calendar weeks. The contractor shall assist the government in preparing for and conducting a PCA. The contractor shall provide at a minimum access to the cutter, drawings and other technical data and provide FRC-B subject matter expert personnel. The contractor shall record the minutes of the audit and report the results in accordance with [CDRL 041-003](#). Discrepancies, if any, must be resolved to the satisfaction of the Contracting Officer and the audit repeated for all affected items.

041-4 [RFP] Configuration Control

041-4.1 [RFP] General. It is imperative that configuration of the FRC-B System be controlled and maintained throughout the performance period and that the configuration baseline(s) be current and correct. The Contractor shall not change an established configuration baseline without an approved Engineering Change Proposal, or an approved Request For Deviation, issued by the Contracting Officer in the form of a contract change.

041-4.2 [RFP] Engineering Change Proposal (ECP). The contractor shall propose changes to the configuration baseline, in response to a request from the Contracting Officer or on the Contractor's own initiative, by submitting an Engineering Change Proposal (ECP) in accordance with [clause H.4](#) and [CDRL 041-004](#). ECPs are categorized into two classes defined in [MIL-HDBK-61A](#). At the direction of the Contracting Officer, in the form of a contract change, the contractor shall implement the Engineering Change.

041-4.3 [RFP] Request For Deviation. Deviations may be requested from a particular requirement of an item's configuration baseline documentation, for a specific hull or number of hulls, or for a specific period of time, by submitting a Request For Deviation (RFD) ([CDRL 041-005](#)). An RFD shall identify the affected item(s), provided a detailed description of the difference between the configuration of the item and the configuration baseline document, provide justification for the deviation, provide a discussion of the consequences of approval, to include technical details explaining the degree of non-compliance and the effects on cutter equipment or system operation constraints, and describe how the deviation will be documented in the hull(s) configuration documentation. The RFD shall only be implemented with the approval of the Contracting Officer.

041-5 [RFP] Information Management

041-5.1 [RFP] The contractor shall develop, implement and maintain a Technical Information Management and Control Plan (TIMCP) [CDRL 041-006](#) that establishes the policy, procedures and processes that will be used to develop, check, distribute, update, manage the configuration of, and deliver the technical information necessary to design, construct and deliver the FRC-B and all other contract products and deliverables. The TIMCP shall ensure data is made available on the Integrated Product Data Environment (IPDE) required in COR Section 042-10.

- 041-5.2 [RFP] The contractor shall ensure security of all data and information associated with this contract. At a minimum, the following procedures shall be used:
- 041-5.2.1 [RFP] A copy of all electronic files and documents shall be stored in a fire-proof, water resistant cabinet off-site from the contractor's facility to ensure that in the event of a fire, flood, hurricane, tornado or other natural or man made disaster, a backup copy of this information is available to the contractor and the Government.
 - 041-5.2.2 [RFP] All electronic information shall be archived on an incremental weekly basis. At no time will anymore than one working day of information be lost.
 - 041-5.2.3 [RFP] Sufficient redundancy shall be built into all computer systems to minimize data loss in the event of failure or loss.
 - 041-5.2.4 [RFP] In the event of failure, loss, or other disaster, the contractor shall provide full data restoration, either on site or to the government, within one working day.

SECTION 042. [RFP] GENERAL ADMINISTRATIVE REQUIREMENTS**042-1 [RFP] General**

- 042-1.1 [RFP] The necessary building facilities, labor, materials, and management shall be provided to design, build, inspect, test, launch, outfit and ready the FRC-B for service. The upkeep, the tests, and the trials for the FRC-B(s) built under this contract shall be provided until the vessels are delivered to the Coast Guard.

042-2 [RFP] Terms and Definitions

- 042-2.1 [RFP] See Section J, [Attachment 1](#) for a list of applicable Terms and Definitions.

042-3 [RFP] Referenced Documents

- 042-3.1 [A002] Documents which are referred in this Circular of Requirements are termed "referenced documents".
- 042-3.1.1 [A002] Standard Drawing. – A NAVSEA or USCG drawing identified as a "Standard Drawing" or "Fleet Drawing" which delineates arrangements or details of systems, equipment or components. No departure from a standard drawing is permitted without specific written approval of the Contracting Officer.
- 042-3.1.2 [RFP] First Tier and Sub-tier References. - Any referenced document which is directly cited for use or application by an identifying number or name in the Circular of Requirements is a first tier reference for each particular use or application for which it is so cited. Any document which is cited in a first tier reference, or in a document referenced therein, is a sub-tier reference. A document which is a sub-tier reference in one application may be a first tier reference in another application when it is cited directly.
- 042-3.1.3 [RFP] Government Specifications are specifications such as Federal (Fed. Spec), Military (Mil. Spec.) and DOD Standards that describe the essential technical requirements for items, materials or services required and used primarily for acquisition.
- 042-3.1.4 [RFP] Government Standards are Government documents that establish engineering and technical limitations and applications of items, materials, processes, methods, design, and engineering practices.
- 042-3.1.5 [RFP] U.S. Navy Design Data Sheets (DDS) contain information for guidance in the design and construction of ship features or systems. Design Data Sheets illustrate typical design and calculation methods and procedures which are acceptable to the Coast Guard.
- 042-3.1.6 [RFP] Industry Standards are documents issued by recognized non-government organizations such as ABS, IEEE, ANSI and ASTM that establish engineering and technical limitations and applications for items, materials, processes, methods, design and engineering practice.

042-4 [RFP] Effective Issue

- 042-4.1 [RFP] The issue of reference documents in effect on the dates shown in Section J, Attachment 4, "External Reference List" shall be used.

042-5 [RFP] Order of Precedence

- 042-5.1 [RFP] The order of precedence of requirements of sections within this Circular of Requirements is as specified below:
- 042-5.1.1 [RFP] Requirements within a section applicable to the entire FRC-B (for example, General Requirements for Design and Construction) state the broadest requirements and apply to all systems and equipment, unless otherwise specified in the more detailed sections, in which case the detailed section requirements apply.
 - 042-5.1.2 [RFP] Specific requirements within a lead section (for example, a section which includes the general or common requirements for a number of similar systems, such as General Requirements for Piping Systems) are the next broadest category of requirements, and shall apply to all systems and equipment in its grouping, unless otherwise specified in detail system sections.
 - 042-5.1.3 [RFP] Specific requirements within a detailed system section (for example, a section which includes the details of a particular FRC-B system such as Fresh Water Systems) are the most detailed requirements. Requirements in these detailed system sections apply for the system covered in the detailed section.
 - 042-5.1.4 [RFP] The omission in one section of details covered in another section shall not be considered an inconsistency.

042-6 [RFP] Contract Data Requirements

- 042-6.1 [RFP] Background. Throughout this contract, the contractor is required to develop, prepare, and submit data as a contract deliverable in support of the FRC-B in accordance with the instructions in the contract, including the CDRLs, Data Item Descriptions (DIDs), associated support data, equipment, and supplies, for use by the United States Coast Guard.
- 042-6.2 [RFP] CDRL Index. Attachment 3 to Section J provides an index of the CDRLs included in this contract. From the on-line version of the contract, the CDRL Index provides links to each individual CDRL, as well as the associated DID(s), references, and attachments. The CDRL Index also provides links to each individual CDRL in a format suitable for printing, and a link to a file that contains all CDRLs in a format suitable for printing or viewing off-line.
- 042-6.3 [RFP] CDRL Description. Not all elements of the general [DD Form 1423](#) are used in this contract. For the sake of consistency with the DD Form 1423, however, elements used in this contract retain the same block number as found in the DD Form 1423, though in some cases the name of the block has changed to improve readability for those not familiar with the DD Form 1423. For this contract, CDRLs are composed of the following elements:
- 042-6.3.1 [RFP] Block 1 (BLK01) of the CDRL identifies the CDRL number, made up of a three-digit SWBS code most closely reflecting the subject of the requirement, followed by a three-digit sequence number.
 - 042-6.3.2 [RFP] Block 2 is not used.
 - 042-6.3.3 [RFP] Block 3 (BLK03) of the CDRL identifies title of the CDRL, as it is referred to in this contract.

- 042-6.3.4 [RFP] Block 4 (BLK04) of the CDRL identifies the DID(s) associated with the CDRL. The DID, as tailored by Block 16 or elsewhere in the contract, provides the content and format for the data deliverables. More than one DID may apply to a single CDRL, and a single DID may be applied in more than one CDRL, though often will be tailored differently for each application.
- 042-6.3.5 [RFP] Block 5 (BLK05) of the CDRL identifies the relevant contract section(s) that invoke the CDRL.
- 042-6.3.6 [RFP] Block 6 is not used.
- 042-6.3.7 [RFP] Block 7 (BLK07) of the CDRL identifies the location for performance of Government inspection and acceptance, using the following codes:

CODE	INSPECTION	ACCEPTANCE
SS	Source (DD Form 250)*	Source (DD Form 250)*
DD	Destination (DD Form 250)	Destination (DD Form 250)
SD	Source (DD Form 250)*	Destination (DD Form 250)
DS	Destination (DD Form 250)	Source (DD Form 250)*
LT	Letter of Transmittal only **	
NO	No inspection or acceptance required	
XX	Inspection and acceptance requirements specified else-where in contract	
* Source indicates Government inspection performed at the contractor's facility.		
** For electronic transmittal, an e-mail constitutes transmission		

- 042-6.3.8 [RFP] Block 8 (BLK08) of the CDRL identifies whether or not the deliverable requires Contracting Officer's approval before the submission is considered final.
- 042-6.3.8.1 [RFP] An "A" indicates that written approval from the Contracting Officer, or his or her designated representative, is required prior to publication and distribution of the final deliverable. The use of "N/A" or a null entry in Block 8 does not forfeit or otherwise affect the Government's right to consider unacceptable any submission of data that does not comply with the contract requirements.
- 042-6.3.8.2 [RFP] The contractor shall maintain internal quality control to ensure submittals are complete and adequate and shall not rely on Government review comments to ensure the technical accuracy of data.
- 042-6.3.8.3 [RFP] On all submissions prior to receiving Government approval, the contractor shall clearly indicate that the submission is draft or preliminary and has not been approved.
- 042-6.3.8.4 [RFP] The time period for Government review, identified in the data requirements list, commences at Government acknowledgment of receipt of the data by the PRO or other designated Government agency responsible for providing approval.
- 042-6.3.8.5 [RFP] The Government response to a draft or preliminary submission that requires approval will generally fall into one of three categories: approved, approved with comments, or returned with comments.

- 042-6.3.8.5.1 [RFP] Approved without comment. The submittal is approved and requires no further changes to the data content. The contractor shall prepare the final deliverable in accordance with this COR Section.
- 042-6.3.8.5.2 [RFP] Approved with comments. The submittal is approved subject to resolution of issues raised by review comments. If all issues can be successfully resolved without further Government interaction, the contractor may make the appropriate changes and distribute the final deliverable. In the event the contractor disagrees with the intent of the review comments, or does not understand or is unable to comply with or resolve issues raised, the contractor shall follow the requirements of this COR Section.
- 042-6.3.8.5.3 [RFP] Returned with comments. The submittal is not approved. The contractor must make the necessary changes to address the comments and resubmit. In the event the contractor does not understand or is unable to comply with or resolve issues raised, the contractor shall resubmit the deliverable with correspondence explaining the reasons the issues cannot be resolved, and any propose suitable alternatives, with supporting rationale.
- 042-6.3.8.5.4 [RFP] On approved final submissions, the contractor shall clearly indicate that the submission is final and note the date of Government approval. Approved final submissions are required to be submitted within the timeframe specified in Block 13, and shall be distributed in accordance with Block 14.
- 042-6.3.9 [A007] Block 9 (BLK09) of the CDRL identifies the distribution statement required for the deliverable, according to the codes in the table below. The cover page of the preliminary or draft submittals shall be marked with the full distribution statement F, unless otherwise noted in Block 16. For deliverables where no specific distribution statement is required, mark the transmittal letter with distribution statement F.

Code	Statement
A	Approved for public release; distribution is unlimited.
B	Distribution authorized to U.S. Government Agencies only. Other requests for this document shall be referred to Commandant (CG-936).
C	Distribution authorized to U.S. Government Agencies and their contractors. Other requests for this document shall be referred to Commandant (CG-936).
D	Distribution authorized to the Department of Homeland Security and U.S. DHS contractors only. Other requests shall be referred to Commandant (CG-936).
E	Distribution authorized to U.S. Coast Guard only. Other requests shall be referred to Commandant (CG-936).
F	Further dissemination only as directed by Commandant (CG-936) or higher Coast Guard authority.
X	Distribution authorized to U.S. Government Agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance with current law and regulation. The controlling Coast Guard office is Commandant (CG-936). All technical documents that are

Code	Statement
	determined to contain export-controlled technical data shall be marked "WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 , et. seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et. seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with current Coast Guard policy." When it is technically infeasible to use the entire statement, an abbreviated marking may be used, and a copy of the full statement included in the transmittal letter.

- 042-6.3.10 [RFP] Block 10 (BLK10) of the CDRL identifies the frequency of the deliverable requirement, using the codes listed below. If the deliverable is of a recurring type, it shall be submitted for the data as of the end of the reporting period identified, unless otherwise indicated in Blocks 12, 13, or 16. Deliverables are due, delivered to the ACO or accepted digitally as described in the IPDE, on or before the due date listed in block 12, 13, and or 16.

Code	Frequency
ANPLY	Annually
ASREQ	As Required. See Block 16.
DAILY	Daily
MTHLY	Monthly
ONE/R	Once, and any time revisions are made.
OTIME	One Time
2TIME	Two Times
WEEKLY	Weekly

- 042-6.3.11 [RFP] Block 11 is not used.

- 042-6.3.12 [RFP] Block 12 of the CDRL identifies the required date of the first submission, in days relative to one of the milestones identified by the codes listed below. Draft or partial submissions, if required, will be identified in Block 16. Government response time will generally be stated in Block 16. If Government response time is not stated in Block 16, assume 30 days.

Code	Milestone
CDD	Cutter Delivery Date
DAC	Days After Contract Award
DAOE	Days After Option Exercised
DARC	Days After Receipt of Comments
LCDD	Lead Cutter Delivery Date
DPPDR	Days Prior to Preliminary Design Review
DPCDR	Days Prior to Critical Design Review
MPTD	Months Prior to Delivery
DARP	Days After Reporting Period

DAPAT	Days After Preliminary Acceptance Trials
DATC	Days After Test Complete
DPPAT	Days Prior to Preliminary Acceptance Trials
BT	Builder's Trials

042-6.3.13 [RFP] Block 13 (BLK13) of the CDRL identifies the required date of subsequent submissions, relative to the milestones identified by the codes listed above. Block 13 is not used for deliverables that do not require approval in Block 8. Draft or partial submissions, if required, will be identified in Block 16. Government response time will generally be stated in Block 16. If Government response time is not stated in Block 16, assume 30 days.

042-6.3.14 [RFP] Block 14 (BLK14) of the CDRL identifies the distribution of the deliverable.

042-6.3.14.1 [RFP] Electronic distribution. One electronic copy of each submission is always required. Electronic copies shall be source files delivered via the IPDE, described in this COR Section, with e-mail notification to the PRO upon posting. The source files shall be submitted in formats compatible with the Coast Guard Standard Workstation, or as agreed to by the Government. Note that the Portable Document Format (.pdf) file format is generally unacceptable except for cover letters bearing a signature. Current CG workstation operating systems and software include:

042-6.3.14.1.1 [RFP] Microsoft® Windows XP® operating system

042-6.3.14.1.2 [RFP] Microsoft® Office 2003 applications

042-6.3.14.1.3 [RFP] AutoCAD® version 2005

042-6.3.14.2 [A007] Hard Copy distribution. Hard copies of the final deliverable, and preliminary and/or draft submissions as identified in Block 16, shall be distributed in the quantities identified. Hard copy means paper, photograph, videocassette, CD-ROM, or DVD, or the like, as appropriate for the deliverable or as otherwise identified in the contract. Hard copies shall be sent by traceable means to the appropriate address, identified by the following codes:

CODE	ADDRESS
PRO	Address to be determined after contract award.
Cutter	Provide a copy with the FRC-B at delivery.

CODE	ADDRESS	
CG-936	<p>Mailing address for CG-936:</p> <p>For US Mail delivery:</p> <p>Commandant (CG-936) Attn: Fast Response Cutter (FRC-B) U.S. Coast Guard Headquarters 2100 Second Street, SW Washington, DC 20593-0001</p> <p>Shipping address for CG-936:</p> <p>For commercial courier and hand-carried deliveries:</p> <p>US Coast Guard (CG-936) Attn: LT George Bixler, (202)475-3062 1900 Half St SW, 09-0211 Washington, DC 20024</p>	
CG-9125	<p>Mailing address for CG-9125:</p> <p>For US Mail delivery:</p> <p>Commandant (CG-9125/KB) M/F: HSCG23-07-R-AFR001 U. S. Coast Guard Headquarters 2100 Second Street SW Washington, DC 20593-0001</p> <p>Shipping Address for CG-9125:</p> <p>For commercial courier and hand-carried deliveries:</p> <p>US Coast Guard (CG-9125/KB) Attn: Katrina Brisbon, (202) 475-3067 Ref: HSCG23-07-R-AFR001 1900 Half St. SW, Suite 09-0414 Washington, DC 20024</p>	
ELC-003	<p>Commanding Officer (ELC-003) Attn: Chief, Deepwater Platform Branch USCG Engineering Logistic Center 2401 Hawkins Point Road, Mail Stop 26 Baltimore, MD 21226-5000</p>	
<p><i>Office Code</i> CG-37/RCU CG-1134 CG-1321 CG-4B CG-641</p>	<p><i>Suite #</i> 3208 5304 5100 JR 09-1132 JR 10-1837</p>	<p>Commandant (office code) U. S. Coast Guard Headquarters 2100 Second Street, SW, Suite ##### Washington, DC 20593-0001</p>

042-6.3.15 [RFP] Block 15 (BLK15) of the CDRL identifies the total number of copies of the CDRL to be distributed, in electronic and hard copy form.

- 042-6.3.16 [RFP] Block 16 (BLK16) in the CDRL provides additional requirements and amplifying instructions for any other block.
- 042-6.3.17 [RFP] For all drawings, hard copy shall mean paper unless otherwise required.
- 042-6.4 [RFP] Cover Format.
- 042-6.4.1 [RFP] All hard copy submittals shall be provided with a cover sheet. The cover sheet shall provide the following information unless otherwise specified in Block 16 or the Data Item Description (DID):
- 042-6.4.1.1 [RFP] A revision letter and date shall be included to reflect the revision of any previously submitted document. The cover sheet may provide a brief explanation of the reason for the change or a more detailed discussion may be included in the content of the submittal.
- 042-6.4.1.2 [RFP] The Contract number, CLIN number, and subtitle of Block 03 (or Block 02 if no Block 03 subtitle applies) shall be included. When multiple submissions are made under the same subtitle, a subtier title shall be included to further identify the content.
- 042-6.4.1.3 [RFP] Submittals requiring approval shall state: "This document requires Government approval." If approval has been granted, the approved version shall state: "This document has been reviewed and approved by the Government."
- 042-6.4.1.4 [RFP] Incremental submittals and documents regarding recurring meetings or events shall identify the specific increment/event date (if not otherwise identified in the subtitle).
- 042-6.4.2 [RFP] The front matter of all digital submittals shall contain the same information as the hard copy submittals above.
- 042-6.5 [RFP] Transmittal.
- 042-6.5.1 [RFP] For distribution, a transmittal document shall be submitted for each copy of a submittal. All addressees shall receive the document with a Letter of Transmittal.
- 042-6.5.2 [RFP] The transmittal document shall be limited to one page. If additional space is necessary for information that cannot be incorporated into the data submittal, enclosures to the transmittal document may be appropriate. As a minimum, the following information shall be included on each letter of transmittal:
- 042-6.5.2.1 [RFP] Contractor's serial number and date;
- 042-6.5.2.2 [RFP] Contract number, CLIN number, and subtitle;
- 042-6.5.2.3 [RFP] Occurrence for the specific CLIN (for example, 1st, 2nd, 3rd);
- 042-6.5.2.4 [RFP] References to prior correspondence relating to the CLIN being submitted and, as appropriate, related CLINs with a brief explanation of the relationship;
- 042-6.5.2.5 [RFP] Any pertinent information not included in the text of the submittal that may relate to impending change action or resolution of design issues (such as "Update may/will be required pending resolution of ECP...");
- 042-6.5.2.6 [RFP] If not stated elsewhere, indication of whether the submittal is partial, complete, or resubmitted to reflect revisions;

- 042-6.5.2.7 [RFP] Government approval requirements and potential scheduling impact that could affect the work effort if Government response is untimely;
- 042-6.5.2.8 [RFP] Subtier titles and related identification numbers may be provided as an enclosure in the event of multiple submissions under the same CLIN; and
- 042-6.5.2.9 [RFP] Distribution and quantity of copies being sent (Block 14 of the CDRL).

042-7 [RFP] Correspondence

- 042-7.1 [RFP] All correspondence by the Contractor with the Coast Guard shall be addressed to the Contracting Officer (original and two copies). Three copies of all correspondence (including phone conversation summaries) between the Contractor and Regulatory and Standards Bodies shall be provided to the Contracting Officer ([CDRL 042-001](#)).

042-8 [RFP] Schedules

- 042-8.1 [RFP] The following general schedules shall be reflected in the Integrated Master Schedule (IMS) required in COR Section 042-13:
 - 042-8.1.1 [RFP] Erection Sequence Schedule
 - 042-8.1.2 [RFP] Drawing Schedule
 - 042-8.1.3 [RFP] Key Event Schedule
 - 042-8.1.4 [RFP] Schedule of Required Dates for Materials
 - 042-8.1.5 [RFP] Material Ordering Schedule
 - 042-8.1.6 [RFP] Data Submission Schedule
 - 042-8.1.7 [RFP] Factory and Familiarization Training Schedule

042-9 [RFP] Meetings

- 042-9.1 [RFP] General. The contractor shall host meetings as required throughout the contract, and ensure they are reflected in the IMP and IMS. For all meetings hosted, the contractor shall provide agendas ([CDRL 042-002](#)) and minutes ([CDRL 042-003](#)).
- 042-9.2 [RFP] Routine Meetings. The contractor shall conduct regular informal status meetings with the PRO to review and discuss contract administration issues. Meetings shall occur at the request of either the contractor or the Coast Guard, but not more frequently than weekly, or less frequently than monthly, unless otherwise agreed to by the Contracting Officer.
- 042-9.3 [RFP] Formal Meetings. The Contractor may request formal meetings with the Government by providing at least thirty days notice, or as otherwise agreed to by the Contracting Officer.

042-10 [RFP] Integrated Product Data Environment (IPDE)

- 042-10.1 [RFP] General. The contractor shall provide and maintain an Integrated Product Data Environment (IPDE) to support the exchange and archiving of contract data. The contractor shall submit all electronic contract deliverables and data via the IPDE for the Government to access and receive. Hard copy requirements are addressed in this COR Section.

- 042-10.2 [RFP] The IPDE shall, at a minimum, provide the following capabilities:
- 042-10.2.1 [RFP] Availability. The IPDE shall be operational and successfully tested by both the contractor and the Government prior to the submission of any review materials required by the design review described in COR SECTION 068. The IPDE shall be available 24 hours a day, 7 days a week.
 - 042-10.2.2 [RFP] Authorized Users. Access to the IPDE shall be restricted to authorized users through a controlled access web-enabled application. Access to the IPDE shall be controlled by an initial challenge upon access. The IPDE shall provide various levels of access rights and privileges specified at the user level (e.g., administrator, guest, user, super-user) and at the data/deliverables level (i.e., ability to allow access to specific data/deliverables to selected users only). The Contracting Officer, or his or her representative, will routinely provide the contractor with the names of authorized users, which will include contracted support personnel, and the level of access authorized for each. The contractor shall maintain and control authorized user access and provide an online list of valid users throughout the performance period.
 - 042-10.2.3 [RFP] Access. The IPDE shall be internet accessible. Authorized personnel shall be able to access the IPDE via the internet using a standard web browser without the need to install or download additional client software. Existing Government portals and websites will not be made available to host the IPDE.
 - 042-10.2.4 [RFP] Data Exchange. The IPDE shall include a location and process to exchange contract documents between the contractor and the Government. The process shall include e-mail notification of data posted for exchange. The intent is that the contractor will submit electronic data deliverables to the Government via this means, and provide email notification to the designated Government representative(s) of a waiting submittal. The Government representative(s) will then access the IPDE, download the submittal to a Government system, and acknowledge receipt of the submittal via email notification to the designated contractor representative(s). A similar process shall be available for the Government to use to in providing data to the contractor.
 - 042-10.2.5 [RFP] Archive Library. The IPDE shall include an archive library of all submittals exchanged via the data exchange process. The archive library shall be an electronic repository providing for the storage, posting, filing, archiving, retrieving, moving, deleting, and locking/unlocking of data, information, and deliverables. Upon receipt of acknowledgement that the Government has received a submittal via the data exchange process, the contractor shall remove the submittal from the data exchange location and archive it to the IPDE library. The archive library shall provide the capability to create, modify, delete, restrict, and move electronic folders and electronic folder structures while ensuring data integrity. File revisions shall be tracked and assigned different version numbers for auditing and rollback. The archive shall be indexed and provide the capability to search for information (data, deliverables, events, tasks, forums, etc.).
 - 042-10.2.6 [RFP] Calendar. The IPDE shall provide an electronic calendar that reflects the Integrated Master Schedule for events and tasks that are related to the FRC-B acquisition. Attributes of events and tasks shall include type, title,

description, start/end dates, recurrence, assignee, and owner. The IPDE shall provide the capability to view events and tasks in a chronological list or monthly tables, and shall allow for filtering and sorting by any or all of the attributes.

- 042-10.2.7 [RFP] Industry standard back up capability shall be provided and all back up media shall be kept, at a minimum, for the length of the performance period. Back up media shall be indexed to provide straightforward access in case of information requests. In the event of an IPDE failure (including compromise due to hacker or virus attacks), lost information shall be limited to activities that have occurred within the preceding 24 hour period.
- 042-10.2.8 [RFP] The contractor shall develop and provide a cost effective mix of IPDE user support for a Government user population estimated at approximately 50 users at any given time. User support shall promote rapid acquisition of the skills needed to use the IPDE and quick access to assistance when encountering problems during use, and may consist of classroom instruction, help desk support, printed desk guides, online help, Frequently Asked Questions (FAQs), and other similar methods. The mix of support formats should consider turnover of IPDE users, estimated at approximately every two years.

042-11 [RFP] Contract Work Breakdown Structure (CWBS)

- 042-11.1 [RFP] The contractor shall develop a Contract Work Breakdown Structure (CWBS) and CWBS Dictionary based on the CLIN structure in Contract Section B, including at a minimum the elements and sub-elements identified in [Attachment 5](#) to Contract Section J, FRC-B Production CWBS.
- 042-11.2 [RFP] There shall be only one CWBS and it will be utilized and consistent throughout the contract. The CWBS shall provide the basis for communication throughout the FRC-B System acquisition process. It shall be the common link which unifies the planning, scheduling, cost estimating, budgeting, contracting, configuration management, and performance reporting disciplines. It is intended to provide a means of consistent communication to permit government and industry managers to evaluate progress in terms of contract performance. The CWBS forms the basis for the structure of the Systems Engineering Management Plan (SEMP), detailed design, configuration management, drawings, and provisioning.
- 042-11.3 [A013] The CWBS shall provide clear traceability of all work efforts and end products. The CWBS shall be sufficiently detailed to identify all major subsystems or components using the guidance in [MIL-HDBK-881A](#). Lower branches of the work breakdown structure for CLINs 0001 and 0007, including the detailed design, drawings, and provisioning, shall be developed using the Coast Guard Engineering Logistics Center Extended Ship Work Breakdown Structure/ Hierarchical Structure Code ([CG ELC ESWBS/HSC](#)).
- 042-11.4 [RFP] The CWBS shall be submitted in accordance with [CDRL 042-004](#).

042-12 [RFP] Integrated Master Plan (IMP)

- 042-12.1 [RFP] The contractor shall develop and maintain an event-driven Integrated Master Plan (IMP) in accordance with [CDRL 042-005](#). The IMP shall delineate the work effort by establishing significant accomplishments that shall be completed prior to an event and the criteria that support successful completion of each accomplishment.

042-13 [RFP] Integrated Master Schedule (IMS)

- 042-13.1 [RFP] The contractor shall develop and maintain an event-based, Integrated Master Schedule (IMS) in accordance with [CDRL 042-006](#). The IMS shall be used as a primary planning and tracking tool and show critical development milestone events and accomplishments for the prime and major subcontractors through the end of the contract performance period. At a minimum the IMS shall reflect the milestones associated with the elements identified in the Attachment 5 to Section J, [Contract Work Breakdown Structure \(CWBS\)](#). The IMS must reflect the Baseline Start/Finish dates as well as the actual Start/Finish dates. The IMS % Work Complete must accurately reflect the work completed.
- 042-13.2 [RFP] The Contractor shall develop and maintain a CDRL Submission Schedule as part of the IMS.

042-14 [RFP] Copies of Purchase Orders

- 042-14.1 [RFP] The contractor shall deliver, to the Coast Guard, copies of all purchase orders for all services, material, parts and equipment ordered for the FRC-B in accordance with [CDRL 042-007](#). Purchase orders shall also be provided for system stock, interim contractor supply support and insurance spares ordered under the FRC-B Contract.

SECTION 043. [RFP] LIFE CYCLE COSTING**043-1 [RFP] Life Cycle Cost Estimate**

- 043-1.1 [RFP] Background. The Coast Guard must develop and maintain a Life Cycle Cost Estimate (LCCE) for the FRC-B throughout the planned 20 year service life of the FRC-B. The LCCE will be used to ensure that life cycle costs are considered when making trade-off decisions throughout the acquisition, operations, and sustainment phases of the FRC-B life cycle.
- 043-1.2 [RFP] LCCE Input. To ensure that costs are fully accounted for, the contractor shall provide input for the Coast Guard's Life Cycle Cost Estimate (LCCE) of the FRC-B in accordance with [CDRL 043-001](#).

SECTION 045. [RFP] CARE OF CUTTER DURING CONSTRUCTION**045-1 [RFP] General**

- 045-1.1 [RFP] This section describes the requirements for maintaining and protecting the FRC-B, its structure, equipment, outfit and associated components during construction.

045-2 [RFP] General and Performance Requirements

- 045-2.1 [RFP] During the entire period the FRC-B is in the Contractor's possession, all parts of the FRC-B shall be maintained in an undamaged condition. Action shall be taken as necessary to prevent wear and damage incident to construction, and to prevent corrosion or other environmental deterioration. Piping, machinery, and equipment subject to freezing shall be kept drained or otherwise protected from freezing, except during trials and tests. Standing water shall not be permitted on the weather decks or inside the FRC-B.
- 045-2.2 [RFP] While the FRC-B is in the Contractor's possession, the Contractor is responsible for implementing an organization and procedures for safeguarding the FRC-B and all its material and equipment from damage due to fire or flooding. The organization and procedures shall be reviewed weekly during construction to ensure that they are sufficient to safeguard the FRC-B at its extent of construction.
- 045-2.3 [RFP] Equipment, prefabricated parts, furniture, and all other items, which are stowed in warehouses or on piers during construction of the FRC-B, shall be kept clean and protected from the environment while stored. All items shall be thoroughly examined for, and rid of, vermin before being placed on board.
- 045-2.4 [RFP] Temporary covers shall be provided to protect boats, flag boxes, uptakes and intakes, searchlights, towline reels, and other equipment requiring protection from the weather as recommended by the manufacturer. Temporary covers shall be fitted over temporary holes in the FRC-B to protect the interior against damage due to weather.
- 045-2.5 [RFP] Trash disposal - The FRC-B and adjacent areas shall be maintained in a neat and orderly condition. For trash disposal purposes, an adjacent area is any area in which the absence of a neat, orderly, and trash free condition could constitute a danger to the FRC-B. All waste shall be removed not less than once a day from each FRC-B under construction.
- 045-2.6 [RFP] Where used in this COR, the term "dry dock" is intended to be generic.

045-3 [RFP] Protection of Machinery, Equipment and Materials

- 045-3.1 [RFP] The Contractor shall be responsible for the care of all machinery and equipment, whether furnished by the Contractor or by the Coast Guard. Cleaning, in accordance with the manufacturer's instructions, shall be performed on any equipment, prior to energizing, which has been subjected to foreign matter intrusion during storage.
- 045-3.2 [RFP] Unless otherwise specified, preservatives applied by manufacturers shall be left intact (or replaced if deteriorated, damaged, or removed) until installation of the machinery or equipment on the FRC-B. If removal of the preservative is necessary for testing the machinery or equipment prior to installation, the

machinery or equipment shall be re-preserved and protected, in accordance with the manufacturer's instructions, until installed.

- 045-3.3 [RFP] Preservatives on working parts shall be thoroughly removed prior to operation of machinery or equipment.
- 045-3.4 [RFP] Fresh water in all diesel engine cooling systems, from initial activation until the FRC-B is accepted by the Coast Guard, shall be chemically treated and maintained to the requirement of [COMDTINST M9000.6E](#) "USCG Naval Engineering Manual", Chapter 233.

045-4 [RFP] Launching, Docking and Undocking

- 045-4.1 [RFP] Building and launching ways adequate for the type of FRC-B to be constructed, or a dry dock shall be provided and certified to [MIL-STD-1625C](#) or ABS standards. The Contractor shall be responsible for: the launch of the FRC-B; developing and submitting stability calculations that show the FRC-B has sufficient stability margin to be launched without capsize. The Contractor shall be responsible for securing the water way area in and around the launch ways of the FRC-B and for taking all precautions to ensure the FRC-B will not capsize during and throughout the launch evolution.
- 045-4.2 [RFP] Written procedures for launching, docking, and undocking the FRC-B shall be submitted. These procedures shall be "approved" by the contractor's representative responsible for conducting this procedure(s) ([CDRL 045-001](#)).
- 045-4.3 [RFP] Should there be any evidence that the FRC-B has been strained or damaged during launching, the FRC-B shall be dry docked immediately unless otherwise directed by the Coast Guard.
- 045-4.4 [RFP] If delivery of the FRC-B is made more than 100 days after a dry docking during which the underwater body was cleaned and touch-up painted, the FRC-B shall again be dry docked for cleaning and touch-up painting of the underwater body.
- 045-4.5 [RFP] Grounding/Collision - If the FRC-B is run aground or is involved in a collision after it is launched, the Coast Guard shall be notified promptly, and an internal inspection for damage shall be conducted. In addition, the FRC-B shall be dry docked for external inspection or shall be examined by divers unless this requirement is waived by the Coast Guard. A detailed report ([CDRL 045-002](#)) shall be submitted describing what caused the grounding or collision and what damage was incurred.
- 045-4.6 [RFP] Rat guards shall be used as soon as the vessel is water borne up to its delivery to the Government. A de-ratting certificate shall be provided prior to delivery. ([CDRL 045-003](#))

045-5 [RFP] Damage Control - General

- 045-5.1 [RFP] A Central Casualty Control Station (CCCS) shall be provided on board or within 30m (98 ft) of an access to the FRC-B. The CCCS shall be equipped with those items necessary to communicate with and direct fire fighting and flooding response teams. The CCCS shall contain up-to-date drawings and diagrams which show the FRC-B arrangement, accesses, stability information, and the location of fire fighting and flooding control equipment.

- 045-5.2 [RFP] Fire Protection. - The Contractor shall be responsible for fire detection, fire prevention, and fire fighting systems and procedures on the FRC-B during the entire construction period.
- 045-5.2.1 [RFP] The Contractor shall establish a Fire Prevention and Protection Plan (FPPP) ([CDRL 045-004](#)). The FPPP shall be maintained current during the entire construction period. Results of drills conducted in accordance with section 045-5.5 shall be included in the Plan as drills are run. Results shall include recommendations and actions taken.
- 045-5.2.2 [RFP] Wood shall not be used on the FRC-B during construction except for platform or scaffold planking. If used for this application, the wood shall be fire retardant in accordance with [MIL-L-19140E](#), Type II treatment, and shall have Category 2 marking at all times.
- 045-5.2.3 [RFP] Fireproof or fire resistant covers shall be used to prevent damage or possible ignition of equipment or materials due to falling sparks or other potential sources of fire.
- 045-5.2.4 [RFP] Machinery in engineering compartments shall not be operated prior to the installation and commissioning of the FRC-B's fixed fire suppression system(s) in such compartments or of equivalent portable equipment.
- 045-5.2.5 [RFP] Flammable liquids shall not be stored on the FRC-B during construction. The quantity of flammable liquids, such as paints, cleaners, and lubricants, brought on board the FRC-B shall not exceed that necessary for one day's use. Mechanical foam producing equipment shall be located in the vicinity of such liquids to combat fires.
- 045-5.2.6 [RFP] Flammable liquids shall not be stowed in the vicinity of the FRC-B, such that fire in these materials could spread to the FRC-B.
- 045-5.2.7 [RFP] Fuels shall not be brought aboard the FRC-B prior to the completion of the FRC-B's permanent tankage and the activation of the FRC-B's permanent fire fighting systems. At such time, fuels shall be discharged directly into the FRC-B's tanks. Auxiliary machinery shall not be operated prior to installation of permanent fuel filling and distribution systems.
- 045-5.2.8 [RFP] Each industrial gas system supplied from shore shall be arranged to be secured by a master valve located on the FRC-B weather deck or exterior location marked to show its purpose. In addition, combustible gas and oxygen manifolds placed aboard the FRC-B shall be equipped with cut-off valves on the inlet side of each manifold.
- 045-5.2.8.1 [RFP] Industrial gases are a group of gases that are commercially manufactured and sold for uses in other applications. These gases are mainly used in an industrial processes, such as steelmaking, medical applications, fertilizer, semiconductors, etc. They may be both organic and inorganic, are produced by extraction from the air by a process of separation or are produced by chemical synthesis, and will take various forms such as compressed, liquid, or solid. Types of industrial gases include but not limited to:
- 045-5.2.8.1.1 [RFP] Acetylene (C_2H_2)
- 045-5.2.8.1.2 [RFP] Carbon dioxide (CO_2)
- 045-5.2.8.1.3 [RFP] Carbon monoxide (CO)

- 045-5.2.8.1.4 [RFP] Chlorine (Cl₂)
 - 045-5.2.8.1.5 [RFP] Hydrogen (H₂)
 - 045-5.2.8.1.6 [RFP] Hydrogen chloride (HCl)
 - 045-5.2.8.1.7 [RFP] Methane (CH₄)
 - 045-5.2.8.1.8 [RFP] Nitrous oxide (N₂O)
 - 045-5.2.8.1.9 [RFP] Propane (C₃H₈)
 - 045-5.2.8.1.10 [RFP] Sulphur dioxide (SO₂)
 - 045-5.2.8.1.11 [RFP] Nitrogen (N₂)
 - 045-5.2.8.1.12 [RFP] Oxygen (O₂)
 - 045-5.2.8.1.13 [RFP] Argon (Ar)
 - 045-5.2.8.1.14 [RFP] Helium (He)
 - 045-5.2.8.1.15 [RFP] Krypton (Kr)
 - 045-5.2.8.1.16 [RFP] Neon (Ne)
 - 045-5.2.8.1.17 [RFP] Xenon (Xe)
- 045-5.3 [RFP] Flooding Protection. - The Contractor shall be responsible for flooding detection, prevention, and control on the FRC-B whenever waterborne during the contract performance period.
- 045-5.3.1 [RFP] A Flooding Prevention and Protection Plan (FLPPP) ([CDRL 045-005](#)) shall be prepared which shall be maintained current from the time of initial launch of the FRC-B through the entire construction period. Results of drills conducted in accordance with this COR Section shall be included in the Plan as drills are run. Results shall include recommendations and actions taken.
 - 045-5.3.2 [RFP] Flooding control procedures shall be established to meet the following performance requirements:
 - 045-5.3.2.1 [RFP] Within 5 minutes after discovery of flooding, all personnel except those involved in flooding control shall be evacuated from the FRC-B.
 - 045-5.3.2.2 [RFP] Within 10 minutes of discovery of flooding, at least 2 pumps with a combined discharge capacity of at least 1,500 lpm (396 gpm) (total) at a 15m (49.2 ft) discharge head shall be rigged and operating to dewater the FRC-B.
 - 045-5.3.2.3 [RFP] Within 15 minutes after discovery of flooding, additional pumps with a combined discharge capacity of at least 3,500 lpm (925 gpm) (total) at a 15m (49.2 ft) discharge head shall be rigged and operating to dewater the FRC-B.
 - 045-5.3.2.4 [RFP] Continuous detection or hourly surveillance of the FRC-B shall be provided while waterborne to detect flooding.
- 045-5.4 [RFP] Preparation for destructive weather - A Destructive Weather Plan (DWP) ([CDRL 045-006](#)) shall be prepared and maintained current which shall be put into effect during times of actual or predicted abnormal conditions of wind, sea, and temperature.
- 045-5.4.1 [RFP] Abnormal conditions are defined as:

Parameter	Value
Wind	>20 kts
Seas	> 2 ft swells
Temperature (Summer)	10° above the previous 5-year historical average summer temperature.
Temperature (Winter)	5° below the previous 5-year historical average winter temperature.

045-5.5 [RFP] Drills.

- 045-5.5.1 [RFP] The effectiveness of the FPPP and the FLPPP, and the personnel required to execute those plans, shall be demonstrated by conducting periodic drills. A fire drill shall be conducted once every 3 months by the Contractor. An additional fire drill shall be conducted once every 6 months at a time selected by the Coast Guard.
- 045-5.5.2 [RFP] A separate flooding drill shall be conducted once every 3 months by the Contractor. An additional flooding drill shall be conducted once every 6 months at a time selected by the Coast Guard.
- 045-5.5.3 [RFP] During the drills required above, the ability to meet the performance requirements incorporated in the FPPP and the FLPPP shall be demonstrated. Failure to meet those requirements will necessitate additional drills being performed at no additional cost to the Coast Guard until the performance requirements are demonstrated. These additional drills shall be conducted at times selected by the Coast Guard.

045-6 [RFP] Monitoring, Alarms and Controls

- 045-6.1 [RFP] During the entire time that the FRC-B is under construction, alarm systems shall be provided for reporting fires or flooding, for warning personnel to cease all hot work, and for evacuating the FRC-B. These systems shall have an emergency back-up power source to ensure alarms are functional in the event of loss of primary power.
- 045-6.2 [RFP] A fire alarm system shall be provided. A sufficient number of alarm boxes, marked and designated with indicator lights, shall be installed to permit a person in any section of the FRC-B to report a fire within one minute. Each box on the circuit shall automatically produce a clear and distinctive signal which can be heard, above FRC-B construction noise, throughout the FRC-B and in the central casualty control station.
- 045-6.3 [RFP] An annunciator drop or similar device shall be provided in the central casualty control station to indicate the reporting of any box. The Coast Guard shall be notified of box locations and actions to be taken when the alarm is sounded.
- 045-6.4 [RFP] The hot work alarm shall be sounded prior to fuel pumping operations and in event of a flammable liquid spill or the leakage of a flammable compressed gas. The alarm shall produce a clear signal distinct from the fire alarm signal. The hot work alarm shall be actuated from the central casualty control station.

- 045-6.5 [RFP] Prior to the launch date, a temporary flooding alarm system shall be installed in all compartments below the waterline which will contain machinery or electronics equipment. The alarms shall be set to trip when the water level in the compartment reaches a level of 150mm above the bottom plate of that compartment, unless installed equipment will be threatened before the water reaches this depth, in which case the alarms shall be set to trip before the water level can damage the equipment. When the FRC-B's permanently installed flooding alarm system is placed in operation, the compartments protected by that system will no longer require the temporary alarm. Alarm conditions shall cause audible and visual indication in the central casualty-control station. The temporary alarm system shall be provided with surveillance measures to indicate system malfunctions.
- 045-6.6 [RFP] An audible and visual system shall be provided to warn personnel to evacuate the FRC-B. The audible phase shall consist of a klaxon horn, siren, or other device that is clearly distinct from the fire and hot work alarms. Sounding of the evacuation alarm shall be accompanied by the flashing of the temporary lights used during those stages of construction when the FRC-B service lighting system is not used. During stages of construction when the ship service lighting system is used for illumination, a minimum of one flashing light shall be provided at each alarm box. The flashing lights may be supplied and controlled from the audible alarm circuit. Both the audible and visible signal shall be actuated from the central casualty control station.

045-7 [RFP] FRP Material Stowage and Construction Facilities

- 045-7.1 [RFP] Fiber reinforcements and core materials shall be stored unboxed and unwrapped in an area protected from dust, oil and moisture and in which the relative humidity does not exceed 60% at ambient temperature for a period not less than ten days prior to preparation for use. In the case where materials are received in vacuum-sealed packaging, the materials may be stored wrapped, providing the seal remains intact.
- 045-7.2 [RFP] Resin will be stored in accordance with the manufacturers' recommendations.
- 045-7.3 [RFP] FRP construction facilities will be air conditioned to maintain temperature and humidity levels within resin and fiber reinforcement manufacturer acceptable levels.

SECTION 068. [RFP] INTEGRATION AND ENGINEERING**068-1 [RFP] System Integration and Engineering**

- 068-1.1 [RFP] The system engineering process provides the overarching linkage between design, execution and life-cycle support. System engineering and technical management shall be provided for designing and integrating engineering tasks. As part of the system engineering effort the contractor shall design and construct the FRC-B System to meet all of the requirements identified in the Contract. The planned integration of systems shall be identified throughout the design process.
- 068-1.2 [RFP] A System Engineering Management Plan (SEMP) shall be prepared and delivered in accordance with [CDRL 068-001](#). The SEMP shall provide the contractor's integrated approach for Acquisition and Supply, Technical Management, System Design, Product Realization, and Technical Evaluation for the FRC-B. The SEMP shall define the contractor's plan for conducting and managing a fully integrated, total program effort and defining how the enabling products (technical data package) will be developed to support the end product (the FRC-B). The SEMP shall identify and tailor systems engineering processes, requirements and tasks from the Electronics Industry Association Standard [ANSI/GEIA EIA-632](#) to satisfy program requirements. The SEMP shall include the contractor's approach to Information Management (COR Section 041-5), Configuration Management (COR SECTION 041), Design Reviews (COR Section 068-2), Reliability, Maintainability and Availability (COR SECTION 076), System Safety (COR SECTION 077), Integrated Logistic Support (COR SECTION 080), Maintenance (COR SECTION 081), Supply Support (COR SECTION 083), Human Factors Engineering (COR SECTION 088), Quality Assurance (COR SECTION 090), Testing, Trials, and Verification (COR SECTION 092), Weight Control (COR SECTION 096), and Risk Management in addition to other contractor plans required to engineer the total system.
- 068-1.3 [RFP] The contractor shall be responsible for addressing Diminishing Manufacturing Sources/Material Shortages (DMSMS) and obsolescence throughout the life of the contract. A description of the approach to DMSMS/obsolescence shall be included in the SEMP. If DMSMS/obsolescence concerns appear to affect the FRC-B system, the contractor shall be responsible to recommend solutions which may include, but not be limited to, alternate vendors, substitute parts, or new sources of supply. Configuration management will also be considered as recommended solutions are developed and provided.

068-2 [RFP] Design Review

- 068-2.1 [RFP] General. While the final responsibility for the design of a fully compliant FRC-B belongs to the contractor, the Coast Guard will review the technical data to confirm contract compliance and requirements traceability during the design review process. The Contract Work Breakdown Structure (CWBS) (COR Section 042-11) shall be the basis for the structure of the design reviews.
- 068-2.2 [RFP] Design Review Plan. The contractor shall develop a design review plan comprised of working level design reviews (minimum of four (4), max of ten (10)) in addition to a formal Preliminary Design Review (PDR) and Critical Design Review (CDR) that represent relatively equal amounts of review effort for the Coast Guard. The design review plan shall be reflected in the IMS in enough

detail to identify all design reviews, describe the technical data contents of each review, and clearly show the planned delivery schedule of the associated contract deliverable requirements (CDRLs) to include at a minimum:

- 068-2.2.1 [RFP] All CDRLs required to be approved by CDR (COR Section 068-2.5).
- 068-2.2.2 [RFP] 3D Technical Data Package ([CDRL 085-007](#)).
- 068-2.2.3 [RFP] Configuration Status Report ([CDRL 041-002](#)).
- 068-2.2.4 [RFP] Technical Information Management and Control Plan ([CDRL 041-006](#)).
- 068-2.2.5 [RFP] Noise Control Plan ([CDRL 073-001](#)).
- 068-2.2.6 [RFP] Weapons System Safety Audit ([CDRL 077-003](#)).
- 068-2.2.7 [RFP] Maintenance Removal Plans/and/or Drawings ([CDRL 085-204](#)).
- 068-2.2.8 [RFP] Master Equipment Configuration List ([CDRL 085-009](#)).
- 068-2.2.9 [RFP] Test and Evaluation Program Plan ([CDRL 092-001](#)).
- 068-2.2.10 [RFP] Finite Element Model CDRL ([CDRL 085-110](#)).
- 068-2.2.11 [RFP] These CDRLs may be divided into several sections, each being submitted to the Coast Guard at different times during design review, to facilitate equal amounts of review effort across the entire review effort. The mock-ups shall also be incorporated into the design review in accordance with COR Section 098-2. Reviews shall correspond to natural breaks in the contractor's design and construction sequence. The Government review period for the contents of a subsequent review period of the design review shall not begin until the previous review has been approved by the Contracting Officer.
- 068-2.2.12 [RFP] Working level design reviews held in advance of CDR are intended to facilitate and expedite the approval process for the Contract Deliverables. Working level design reviews held post CDR are intended to focus on detail design related items.
- 068-2.3 [RFP] The Coast Guard's Co-Chairperson for the design reviews shall be designated by the Contracting Officer.
- 068-2.4 [RFP] The Configuration Items for PDR and CDR shall include the FRC-B, the hull, the hull structure, mission critical equipment (defined in COR SECTION 076), configuration items (defined in COR SECTION 041), and any other equipment, system, or subsystem necessary for meeting the requirements of this COR Section. Hardware Development, Interface, and Software Requirements and Specifications or similar documents mentioned in [MIL-STD-1521B](#) shall be taken to mean this Circular of Requirements.
- 068-2.5 [RFP] Preliminary Design Review (PDR).
 - 068-2.5.1 [RFP] While it is the Contractor's responsibility to develop the design review schedule, it is recommended that PDR is completed within 90 calendar days after contract award.
 - 068-2.5.2 [RFP] PDR shall be conducted in accordance with the general requirements above and the following paragraphs of [MIL-STD-1521B's](#) Appendix D: 40.1, 40.2.1., 40.2.2.i through m, 40.2.2.p, 40.2.3.a and b, 40.2.3.d through j, 40.2.3.n, 40.3.1, 40.3.2.c through e, 40.5.2, 40.5.4, 40.5.5, 40.5.7, 40.5.8,

40.5.11, 40.6.3, through 40.6.6, 40.6.11, 40.7.2, 40.7.4, 40.8.1, 40.8.3 through 40.8.7, 40.9.1, 40.10.1, 40.10.2.e and f, 40.11.1.c and d, 40.13.2, 40.13.5 through 40.13.7, 40.14.1, 40.14.3, 40.15.1, through 40.15.4, 40.17.2, 40.17.3, 40.19.1, and 40.20.

068-2.6 [RFP] Critical Design Review (CDR).

068-2.6.1 [RFP] CDR shall be scheduled and completed in order to meet the FRC-B delivery schedule.

068-2.6.2 [RFP] CDR shall be conducted in accordance with the general requirements above and the following paragraphs of MIL-STD-1521B's Appendix E: 50.1, 50.1.1, 50.1.2, 50.2, 50.2.1, 50.2.2.f and g, 50.2.2.i and j, 50.2.3 through, 50.3.1, 50.3.2.d and e, 50.4.a and b, 50.5.1, 50.5.2, 50.5.4, 50.5.6, 50.5.8, 50.6.2, 50.6.3, 50.6.5, 50.7, 50.8, 50.9.1, 50.9.2, 50.10.1, 50.10.2.c, 50.11.1, 50.11.3, 50.13.1 through 50.13.6, 50.14.1, 50.14.2, 50.15.1 through 50.15.4, 50.17.2, 50.18, and 50.19.

068-2.6.3 [RFP] The Critical Design Review shall be considered complete when the contractor has achieved the following:

068-2.6.3.1 [RFP] Approved Ship Construction Drawings identified in COR SECTION 085.

068-2.6.3.2 [RFP] Approved Calculations identified in COR SECTION 085.

068-2.6.3.3 [RFP] Approved Configuration Management Plan ([CDRL 041-001](#)).

068-2.6.3.4 [RFP] Approved Noise Control Design History ([CDRL 073-002](#)).

068-2.6.3.5 [RFP] Approved System Safety Program Plan ([CDRL 077-001](#)).

068-2.6.3.6 [RFP] Approved Integrated Support Plan (ISP) ([CDRL 080-001](#)).

068-2.6.3.7 [RFP] Approved Human Factors Engineering (HFE) Plan ([CDRL 088-001](#)).

068-2.6.3.8 [RFP] Draft testing matrix containing all requirements of the COR as required by the Test and Evaluation Program Plan COR Section 092-3.

068-2.6.3.9 [RFP] Approved Weight Control Program Plan [CDRL 096-001](#).

068-2.6.3.10 [RFP] Design and Construction Weight Report ([CDRL 096-002](#)) reflecting Baseline Weight Estimate that is consistent with all CDR documentation and required deliverables.

068-2.6.3.11 [RFP] Received favorable Contract Design Evaluation from ABS indicating no technical issues stand in the way of compliance with the ABS HSNC Guide. Evaluation shall include a complete list of outstanding comments received from the plan review.

SECTION 070. [RFP] GENERAL REQUIREMENTS FOR DESIGN AND CONSTRUCTION**070-1 [RFP] Laws, Classifications Rules, Regulations, Standards and Certification**

070-1.1 [RFP] Unless specifically addressed in each section, the following references apply:

070-1.1.1 [RFP] The American Bureau of Shipping, "[Guide for Building and Classing High Speed Naval Craft](#)" (ABS HSNC Guide) shall be used in the design, construction, and certification of the vessel, except where noted herein. The FRC-B shall be classed as ✕A1, Circle E, HSC Naval Craft, ✕AMS, ✕ABCU SFA(25).

070-1.1.1.1 [RFP] The R2 notation is not required however the redundancy requirements to meet an R2 notation shall be met.

070-1.1.1.2 [RFP] To meet the classification requirements, an ABS Program Manager shall be provided as a part of the contractor's contract with ABS. The ABS Program Manager shall be responsible for maintaining a complete and up-to-date awareness of all matters related to compliance verification for which ABS is responsible and for communicating such information to both the government and the contractor. The contractor shall authorize and require the ABS Program Manager to provide the government with a copy of all correspondence (including phone conversation notes) related to compliance verification for which ABS is responsible as it is promulgated and initially distributed. This shall include drawings and other engineering work requiring ABS approval as well as correspondence generated which relates to such approvals, including all such correspondence dealing with vendors. For drawings requiring ABS approval, the contractor shall require ABS to host a conference with the government to review any comments prior to issuance of approval status to the contractor. It remains the contractor's responsibility to ensure compliance with all contract requirements. The above shall be indicated in the contract between the contractor and ABS.

070-1.1.2 [RFP] In addition to the Classification Certificate (interim at delivery – final 30-90 days later) ([CDRL 070-001](#)), the following certificates (or Statements of Fact) shall be provided:

070-1.1.2.1 [RFP] International Tonnage Certificate ([CDRL 070-002](#))

070-1.1.2.2 [RFP] Panama Canal Tonnage Certificate ([CDRL 070-003](#))

070-1.1.2.3 [RFP] Suez Canal Tonnage Certificate ([CDRL 070-004](#))

070-1.1.2.4 [RFP] Load Line Certificate ([CDRL 070-005](#))

070-1.1.2.5 [RFP] Navigational Rules, International - Inland (COLREGS), [COMDTINST M16672.2D](#) ([CDRL 070-006](#))

070-1.1.2.6 [RFP] ABS Lifting Appliance Certificate (as applicable) ([CDRL 070-007](#))

070-1.1.2.7 [RFP] Applicable laws of the Food and Drug Administration which certify the vessel to receive a "Certificate of Sanitary Construction" as modified under [21 CFR 1240.20](#) ([CDRL 070-008](#)) and a "Deratting Exemption Certificate" as evidenced by [42 CFR 71.46](#) and [21 CFR 1250.96](#) ([CDRL 070-009](#)).

- 070-1.1.2.8 [RFP] International Code of Safety for High Speed Craft (IMO HSC Code) Statement of Voluntary Compliance (SOVC), cargo (CDRL 070-010)
- 070-1.1.2.9 [RFP] IMO Marine Pollution Prevention (MARPOL Annex I) SOVC (CDRL 070-011)
- 070-1.1.3 [RFP] Code of Federal Regulations (CFR), Shipping (46)
- 070-1.1.4 [RFP] Code of Federal Regulations (CFR) 40 CFR Parts 94: Control of Emissions From Marine Compression-Ignition Engines (CDRL 070-012).
- 070-1.1.5 [RFP] Federal Communication Commission Regulations.
- 070-1.2 [RFP] If any of the references listed in COR Section 070-1.1 requires a gross tonnage assumption use 300 gross tons unless otherwise specified.

070-2 [RFP] Characteristics

- 070-2.1 [A014] The operating/design characteristics of the FRC-B shall be as shown in Table 70-1.

Table 70-1 – Operating/Design Characteristics

Length Overall (LOA)ⁱ	48.7m (160 ft) (maximum) 36.6m (120 ft) (minimum)
Draft, maximum appendage (Navigational), Full Load (EOSL ⁱⁱ):	3.05m (10 ft)
Vessel Classification:	See COR Section 070-1.1.1
Design Service Life:	20 Years (minimum)
Structural Fatigue Life:	25 Years ⁱⁱⁱ
Operational Tempo:	2,500 operating hours per year (underway).
Speed: @ Full Load (EOSL), clean hull ^{iv} .	
Flank Speed: (The maximum speed achievable at 97% of the fuel stop power rating of the main engines.)	28 knots (minimum)
Speed Range: Bumpless speed (maintain constant speed without the need to operate the propulsion plant in an unsteady state, i.e. clutching in/out)	3 knots to Flank Speed

<p>Transit Speed:</p> <p>(The speed that is not at the craft's resistance hump speed; allowing the vessel to develop dynamic lift and stability with the minimum horsepower.)</p>	<p>18 knots (minimum)</p>
<p>Loiter Speed:</p> <p>A minimum operating speed that provides full vessel control with the propulsion engine clutches fully engaged (minimum of 2), and engine revolutions sufficient for the vessel to operate continuously.</p>	<p>10 knots (minimum)</p> <p>16 knots (maximum)</p>
<p>Maneuvering Speed:</p> <p>Meets the requirements of NATO ANEP-70(1)C01 for Patrol Boats; use designations for T&P and HM.</p>	<p>3 knots (minimum)</p> <p>7 knots (maximum)</p>
<p>Independent Operations:</p>	<p>Endurance for 5 days.</p>
<p>Endurance, Fuel:</p> <p>Based on an operational profile of:</p> <p>80% at Loiter Speed</p> <p>15% at Transit Speed</p> <p>5% at Flank Speed</p>	<p>Based upon the Independent Operations endurance required above (minimum):</p> <p>Endurance fuel requirements are calculated at half-load end of service life displacement per the operational profile. Ship's service generating plant fuel consumption is to be based on the power required at cruise, highest electrical power demand for either winter or summer conditions. The brake horsepower required for the transit speed shall be increased by 10% to account for adverse sea conditions.</p> <p>The endurance fuel load shall include 189 liters (50 gallons)/day for Cutter Boat operations.</p> <p>A 25% increase (includes tail pipe allowance) shall be applied to the total endurance fuel load calculation to account for a SAR mission reserve^v.</p>
<p>Seakeeping:</p>	<p>Conduct all missions through SS 4 (see COR SECTION 079) at speeds up to Transit Speed for 8 hours on all headings. Survive through SS 6 (see COR SECTION 079) up to Loiter speed for 8 hours on all headings. Survival is defined as the ability to maintain positive upright flotation, stability, structural integrity, propulsion, maneuvering, navigational capability and the ability to return to Safe Harbor. Safe Harbor is defined in the ABS HSN C Guide.</p>

Towing:	Capable of towing a vessel similar to itself in size and displacement, at speeds of 5 to 8 knots, in SS 4 (see COR SECTION 079) for 200 nautical miles, while maintaining capability to launch and recover the Cutter Boat.
Crew Size:	20 enlisted personnel and 2 officers.
Watchstanding:	Not more than three permanent enlisted watch stations (two bridge and one engineering) are required to conduct normal and emergency machinery operations, navigate, communicate, and maintain maritime domain awareness in the patrol environment.
Accommodations, Internal Deck Area:	Compartments sized such that the total gross deck area allocated to personnel related spaces (berthing, sanitary, mess, and galley) is at least 4.6m ² (50 ft ²) per permanent accommodation.
Cutter Boat Launch and Recovery:	Safely launch and recover the Cutter Boat through SS 4 (see COR SECTION 079) while the FRC-B is towing another vessel.
Armament:	Capable of mounting one remotely operated 25mm stabilized minor caliber gun system and 4 non-stabilized crew-served .50 caliber machine guns. (See COR Section 700.)
Notes:	
<ul style="list-style-type: none"> i. For the purposes of this requirement, LOA includes everything that contributes to the length of the vessel, including all protrusions, both above and below the surface of the water. ii. EOSL: End of Service Life as defined in COR Section 096-1.5. iii. Calculations and analyses shall be provided to verify this requirement in accordance with COR Section 100. iv. Speed/Power calculations and analysis shall be in accordance with COR SECTION 200-1.2. v. Fuel endurance methodology shall be in accordance with ABS NVR 2-1-1/Appendix 1 as modified by the Coast Guard Appendix. Separate fuel endurance fuel calculations shall be made for loiter, transit and flank operating conditions and totaled. (COR SECTION 085) 	

070-2.2 [RFP] The FRC-B shall have the capability to receive fuel at a single point equipped for the use of CAM-LOC type fittings. The fuel system shall allow refueling at sea at a receiving rate of not less than 950 lpm (251 gpm).

070-2.3 [RFP] The FRC-B shall be equipped with a galley and a single mess room.

070-2.4 [RFP] Heating, ventilation, air conditioning, and thermal and acoustic insulation shall be provided for all living, pilothouse, and other normally crewed operating compartments for improved crew effectiveness and comfort as well as proper equipment operation in accordance with the criteria in COR Section 070-9.3.

- 070-2.5 [RFP] An area shall be provided on the FRC-B that is suitable for safe helicopter hoist operations at the main deck level with clearance from potential obstructions and hazards.

070-3 [A009] Reserved

070-4 [RFP] Command and Control

- 070-4.1 [RFP] The FRC-B shall have an enclosed pilothouse serving as a command and control station equipped with craft and machinery control, monitoring, and complete navigation and communications capabilities. If more than one command and control station is provided, the pilothouse shall be the primary control station. The pilothouse shall not block safe exterior fore and aft traffic on the FRC-B (bow to stern).

070-5 [RFP] Design Conditions

- 070-5.1 [RFP] Equipment and machinery (including equipment installations and mounts) shall be capable of continuous operation under the following conditions:

070-5.1.1 [RFP] -40°C (-40°F) to 60°C (140°F) ambient air (deck machinery only).

070-5.1.2 [RFP] -25°C (-13°F) to 60°C (140°F) ambient air (C4ISR topside equipment only).

070-5.1.3 [RFP] -25°C (-13°F) to 60°C (140°F) ambient air (main propulsion and electric generation diesel engines only).

070-5.1.4 [RFP] -2°C (28°F) to 35°C (95°F) seawater

070-5.1.5 [RFP] 0°C (32°F) to 35°C (95°F) freshwater

070-5.1.6 [A010] 0% to 100% relative humidity (deck machinery only)

070-5.1.7 [A010] 0% to 95% relative humidity (internal equipment and machinery only)

- 070-5.2 [RFP] Equipment and machinery in exposed locations shall be designed to withstand wind and rain at sustained velocities up to 70 knots.

- 070-5.3 [RFP] Equipment and machinery shall be designed and installed to operate satisfactorily, to maintain satisfactory lubrication, and to avoid loss of fluids from machinery or hydraulic systems when the craft is permanently trimmed down by bow or stern as much as 5° from the normal horizontal plane, and when the craft is permanently listed up to 15° to either side of the vertical.

- 070-5.4 [RFP] Equipment and machinery shall operate with extreme roll of as much as 45° and extreme pitch of as much as 15° (both single amplitude).

070-6 [RFP] Design Loads

- 070-6.1 [A010] Where loads or structural requirements are not specified or not referenced, FRC-B structure, equipment foundations, load bearing structures, and switchboards and electrical distribution equipment must sustain loads resulting from vertical peak accelerations of at least 2g and horizontal peak accelerations of at least 0.5g.

070-7 [RFP] Templates and Patterns

- 070-7.1 [RFP] Templates and patterns taken from the lofted offsets shall be accurate to plus or minus 2mm (0.08 in). If computer-aided lofting and numerically controlled

cutting processes are used, parts cut from plate by programmed automatic cutting equipment shall be accurate to plus or minus 2mm (0.08 in).

070-8 [RFP] Workmanship

070-8.1 [RFP] General

- 070-8.1.1 [RFP] Plating shall be fair, closely fitted, and shall be free from buckles or uneven sight edges. Special care shall be used in aligning and fairing of surfaces which are to be welded. All formed plates or shapes shall be formed true to required alignment, shape or curvature. Where flanges are used for attachments, the faying edges shall be beveled and free from hollows. Shims, slugs, etc. shall not be used to correct improper fit. Members shall be in alignment before welding is undertaken.
- 070-8.1.2 [RFP] All cuts shall be neatly and accurately made with edges cleaned for welding. All sharp edges exposed to personnel or equipment shall be dressed or ground smooth to avoid injury to operating or maintenance personnel or damage to equipment. Internal corners shall be filleted and external corners shall be rounded off. Ragged edges or sharp projections which are hazardous to operating personnel, or detract from the finished appearance shall be removed. Flat bar, rod stock, or other suitable protection shall be fitted around openings through which personnel normally pass. Care shall be exercised in welding to keep warpage and distortion to a minimum. No fairing cement shall be used.
- 070-8.1.3 [RFP] Piping and wiring leads and vent ducts that penetrate watertight subdivision bulkheads, shall pass through these boundaries as close to the main deck and to the centerline as practicable.
- 070-8.1.4 [RFP] All penetrations through weathertight and weather boundaries shall be made with metallic stuffing tubes. Multi-cable transits may be used in lieu of stuffing tubes in other than weather boundaries.
- 070-8.1.5 [RFP] Heat forming and straightening shall not be used in aluminum construction.

070-8.2 [RFP] FRP Construction

070-8.2.1 [RFP] General

- 070-8.2.1.1 [RFP] Workmanship throughout the FRC-B and materials used in the construction of the FRC-B shall reflect the best marine quality, methods and practices. All sharp or jagged edges liable to cause injury to personnel or damage to equipment shall be dressed smooth. Internal corners shall be filleted and external corners shall be rounded off.
- 070-8.2.1.2 [RFP] The finished lines of the plugs and molds shall be in accordance with the requirements for fairness and within the tolerances stated elsewhere in this COR.
- 070-8.2.1.3 [RFP] Hull - The hull shall not be removed from the mold before installation of major interior strength members. The hull shall not be removed from the mold before a Barcol reading of 45 is achieved on the hull laminate, as determined by taking readings in the area of each station on each of the starboard and port sides of the hull and averaging them.

070-8.2.2 [RFP] Laminating Processes

- 070-8.2.2.1 [RFP] The Contractor shall institute a Lamination Quality Assurance Program which will ensure that the FRP laminates meet the minimum requirements of this section. The program shall include a manual ([CDRL 070-013](#)) that shall describe the system of non-destructive or in-process testing and inspection to ensure that all as-laminated parts meet the design criteria applicable to the part. The system shall be verified by manufacture and subsequent test of panels with and without deliberate defects. The system shall include as a minimum 100% visual inspection of both sides of all finished parts. The resulting system and its visual and other standards shall be incorporated into the Quality System Plan.
- 070-8.2.2.1.1 [RFP] Testing shall comply with the [ABS HSNC Guide](#).
- 070-8.2.2.2 [RFP] A Laminating Process Instruction (LPI) shall be prepared in accordance with the ABS HSNC Guide, 2-6-3, and included in the Lamination Quality Assurance Program Manual.
- 070-8.2.2.3 [RFP] The LPI and Construction Drawings requirements complement each other and in some cases there may be a certain amount of overlapping information between the documents. The Construction Drawings must stand alone, but the LPI may refer to certain details of construction.
- 070-8.2.2.4 [RFP] The Contractor shall either include copies of applicable construction details in the LPI, or reference specific details in the Construction Drawings, to eliminate the potential for confusion. Laminating resins shall be used in accordance with the resin manufacturer's recommendations. The Contractor shall be prepared to verify, if required, that the proposed procedure will ensure that the laminate requirements will be met.
- 070-8.2.3 [RFP] Laminate Quality Requirements
- 070-8.2.3.1 [RFP] Visual inspections shall be conducted at all stages of lamination to ensure that the laminate quality requirements of [ASTM D2563](#) (Level II) are met.
- 070-8.2.3.2 [RFP] Mold surfaces of laminates shall have roughness not exceeding $0.8\mu\text{m}$ (3.15×10^{-5} in) roughness average value, Ra, as measured in accordance with [ANSI/ASME B46.1](#).
- 070-8.2.3.3 [RFP] Waviness of molded surfaces shall not exceed a depth in millimeters of 0.03 times the square root of the shortest span, in millimeters, for each depression or protrusion.

070-9 [RFP] Habitability

- 070-9.1 [RFP] Features affecting habitability (shipboard quality of life/quality of work) include all elements of design and construction that make the FRC-B more livable and comfortable. Arrangements of accommodations and work spaces shall maintain a pleasing appearance, clear traffic patterns adequate personal services, and maximum utilization of space, in addition to the following:
- 070-9.1.1 [RFP] Living and continuously-manned work spaces shall be designed in accordance with the habitability criteria in the [ABS Guide for Crew Habitability on Ships](#), Human Factors Engineering [ASTM F1166](#), as well as [OPNAVINST 9640.1A](#) for guidance. Runs of piping, wiring and ductwork shall be avoided in living compartments, sanitary compartments, commissary, and mess room.

- 070-9.1.2 [RFP] Specified levels of noise and vibration; see COR SECTION 073.
- 070-9.1.3 [RFP] Minimum clear headroom; see COR Section 071-2.
- 070-9.1.4 [RFP] Adequate lighting; see COR Section 332.
- 070-9.1.5 [RFP] Heating, air conditioning and ventilation; see COR Section 512.
- 070-9.2 [RFP] Total gross deck area allocated to personnel spaces (berthing, sanitary, mess and galley) shall comply with the table in COR Section 070-2.1.
- 070-9.3 [RFP] The FRC-B shall have heating, ventilation, and air conditioning (HVAC) for all accessible spaces within the living quarters envelope (passageways, stairways, heads, and pantries). Non-living, but manned, spaces (machinery, mechanical (including steering gear spaces), electronic, electrical, and stores) shall be provided HVAC as required for the proper operation of equipment and humidity control. The HVAC shall meet the requirements of COR Section 512.
- 070-9.4 [RFP] Dining: The cutter shall have a galley equipped in accordance with COR Section 651. Cold and dry storage for food items will be sized for patrols of a duration meeting the Independent Operations Endurance requirements in COR Section 070-2.1. The mess deck will seat at least 16 crew members (and up to 22 total personnel) and shall be arranged so that it can be used as a lounge, administrative work area, and as a learning center with connections for the shipboard LAN (COR Section 412) and on-board computer based training system.
- 070-9.5 [RFP] Berthing: The FRC-B shall support a mixed-gender crew of any combination up to 50/50 male to female. It shall have berths for 2 officers, 2 chief petty officers, 18 enlisted crew, and at least 2 mission essential personnel/guests. As an objective, there shall be berths for 4 mission essential personnel/guests. The CO, XO, Operations Petty Officer, and Engineering Petty Officer shall each have a single stateroom with administrative work space, including desks, file storage, and LAN access for computers. All other staterooms shall have no more than 4 berths in each. All staterooms shall be arranged and furnished in accordance with COR Section 640. Berthing areas shall be acoustically treated and be as far from machinery spaces as possible to allow maximum crew rest.
- 070-9.6 [RFP] Sanitary Facilities: The CO and XO may share a semi-private head and shower. The sanitary spaces shall be adjacent to the berthing areas and separated from the galley, mess deck, and work spaces. They shall be accessible without going through berthing spaces. A hand sink and a deep sink shall be provided in or directly adjacent to the Main or Auxiliary Engine Room(s). A deck head shall be provided that is accessible and adjacent to the Pilothouse. Sanitary facilities shall accommodate a mix of 50/50 male to female crew.
- 070-9.7 [RFP] Medical Facilities: The mess deck shall serve as a triage station when needed. The triage station shall be equipped with installed high intensity lighting, medical oxygen, and an eyewash station. Eyewash stations shall also be provided in spaces where caustic fluids or vapors may be encountered. Primary medical lockers for storage of medical supplies shall be recessed into the bulkhead of the triage station. A connection to the cutter's radio communications shall be provided for transmission and reception (classified and unclassified) of medical information and expert advice from shore or other ship medical facilities.

- 070-9.8 [RFP] Laundry facilities: The ship shall have at least one commercial-type washer and dryer unit(s) which may be used by 1 person at a time. The washer and dryer unit(s) shall be located near the berthing area. The unit(s) shall be removable and replaceable through existing passageways (0.762m (30 in) maximum).
- 070-9.9 [RFP] Administrative Facilities: The space shall have connections to the ship's LAN and have shipboard and ship-to-shore telephone service. There is no separate administrative area; the Commanding Officer's (CO's), Executive Officer's (XO's), and 2 (two) Chief Petty Officer's (CPO's) staterooms serve this purpose.
- 070-9.10 [A010] Storage Facilities: The ship shall have facilities for the proper stowage of tools, spare parts, outfit, personal effects, classified material, and life rafts. Tool and parts storage shall be in or adjacent to the engine room. Electronic parts and other spares requiring climate control shall be provided with climate controlled storage. Deck outfit items shall be stored in a locker on the main deck accessible from the exterior of the cutter. Stowage shall be provided for thermal suits and PPE that is readily accessible from the interior of the FRC-B. A lazarette shall be provided below, and accessible from, the main deck for storage of bulk items not requiring climate control. Ready service and ammunition stowage for the main gun shall be provided in accordance with COR Section 700. Damage control storage areas shall be provided. Pyrotechnic storage shall be located adjacent to and aft of the Pilothouse. The tow hawser shall be stored on a non-corrosive tow reel below the main deck. AMIO storage shall include dry storage lockers (1.7m³ (60 ft³)) accessible from weather deck, dry storage in the galley (0.06m³ (2 ft³)), freezer storage (0.03m³ (1 ft³)), PFD storage (150 Adult Type III Life Jackets) and one 15-person life float on the Weather Deck.
- 070-9.11 [RFP] AMIO Handling: The main deck shall be capable of holding 150 Alien Migrants for 24 hours, with a minimum clear deck area of 0.5m² (5 ft²) per person. The arrangement shall allow for the processing and movement of alien migrants from forward to aft and vice versa without requiring interior access to the FRC-B. AMIO handling facilities shall include an awning, portable head(s), and potable water delivery to the forward and aft main decks. Deck arrangements shall be such that guarding personnel are provided with maximum separation from Alien Migrants while providing optimal opportunity for control. The main deck shall have the prescribed minimum clear deck area to hold alien migrants after deducting the area required for any portable heads (footprint and tiedown interferences included).

070-10 [RFP] SI (Metric) Measurement Units

- 070-10.1 [RFP] General Metric Requirements. The general use of metric units is encouraged but not required in the design and/or construction of the FRC-B and/or reporting of Contract Data, unless otherwise specified.
- 070-10.2 [RFP] Specific Metric Requirements.
- 070-10.2.1 [RFP] Although the general use of metric units is not required, there are sections of this COR, the Contract Data Requirements, and the DIDs which specifically call for the use of SI (metric) measurement units. Where the use of SI (metric) units are called out specifically, these specific metric use requirements shall be met as written. If there is a discrepancy between U.S.

and metric values as written in this COR the SI (metric) system takes precedence.

070-10.2.2 [RFP] When metric units are used in whole or in part for convenience or in response to a specific contract requirement, compliance with [Federal Standard 376B](#), "Preferred Metric Units for General Use by the Federal Government", and [ASTM F 1332-93](#), "Use of SI (Metric) Units in Maritime Applications", is required.

070-10.2.3 [RFP] Tables, charts, indicators, and other related information for the use of the FRC-B crew shall be in Imperial (US) units or a conversion of the information from metric to Imperial (US) units.

SECTION 071. [RFP] ACCESS**071-1 [RFP] General**

- 071-1.1 [RFP] Interior access shall be provided to all machinery compartments, living compartments, and control compartments. Access via the deckhouse rather than access through bulkheads below the main deck is preferred. No more than one watertight door may be fitted in a watertight bulkhead, and it must be located as high and as far inboard as practicable.
- 071-1.2 [RFP] Passageways shall have a minimum 910mm (36 in) clear width throughout the length of the passageway from the deck to the overhead. No items (circuit breakers, junction boxes, etc.) shall be mounted on the walls or bulkheads to reduce the effective width of the passageway less than 910mm (36 in). For items that protrude into a route of access, every effort shall be made to mount the items 77 in or more above the deck or between 38 in and 53 in above the deck surface, otherwise guards and padding shall be installed to protect personnel moving in the passage.

071-2 [RFP] Headroom

- 071-2.1 [RFP] With the exception of light fixtures and ventilation louvers, passageways shall have a minimum vertical clearance not less than 2.1336m (84 in). In all other compartments, minimum vertical clearance shall be not less than 1.98m (78 in). Items such as machinery, piping, wireways, ducts, operating rods, brackets, and tracks shall be kept clear of routes of access. Lighting fixtures, ventilation ducts, piping, and wiring shall be installed as close to the overhead as their mounting brackets will allow.
- 071-2.2 [RFP] Archway openings shall have the entire opening lined with round-edged flat bar.

071-3 [RFP] Watertight Integrity and Structural Limitations

- 071-3.1 [RFP] Exposed, access openings shall be located so as to avoid interference with girders and transverse web frames.

071-4 [RFP] Pilothouse

- 071-4.1 [A009] Pilothouse weather access to the main deck shall be provided. Ladders used to provide this access shall be inclined and not exceed 50° from horizontal. Access from the pilothouse to the weather deck may be provided by weather tight doors port and starboard or weather tight door(s) aft facing to an athwartship exterior deck or passageway. Pilothouse access to the main deck via external inclined ladders shall include exterior landings at the Pilothouse level meeting the requirements of COR Section 623 to facilitate entry during foul weather.
- 071-4.2 [RFP] Direct access shall be provided between the pilothouse and the FRC-B's interior without exiting to a weather deck. If an open bridge is provided, there shall be direct access between the pilothouse and the open bridge.

071-5 [RFP] Machinery Compartments

- 071-5.1 [RFP] Machinery compartments containing flammable liquids or engines shall have vertical escapes leading to the weather deck.

071-6 [RFP] Forepeak

- 071-6.1 [RFP] A hatch shall provide access to the forepeak from the weatherdeck. The hatch shall have an attached escape handle to open the hatch from inside the forepeak.

071-7 [RFP] Lazarette

- 071-7.1 [RFP] A hatch shall provide access to the lazarette from the weatherdeck.

071-8 [RFP] Access to Equipment and Machinery

- 071-8.1 [RFP] Physical and visual access shall be provided for the maintenance, adjustment, repair, and removal of and installation of all equipment, machinery, and components in accordance with [ASTM F1166](#). The access routes, size, quantity, and location of clear access and removable patches shall be determined based on the installed equipment and tools required. Piping, wireways, ducts, and other obstructions or other hazards shall be arranged to be clear of access areas. Clear access shall be provided for diagnostics and routine maintenance such as filter removal and cleaning and exercising valves.
- 071-8.2 [RFP] Bolted Equipments Removal Plate(s) (BERPs) shall be provided for main engine and generator removal. The plate(s) shall be arranged to enable engine removal without engine disassembly. No piping, wiring, ventilation duct, or other permanent installation shall be installed in way of the plates(s) that would interfere with the removal of equipment. BERPs shall be secured with round head hex drive bolts or other method to prevent tripping hazards.
- 071-8.3 [RFP] In addition to special lifting guides, jacks, and supports furnished by manufacturers of machinery plant components, lifting gear necessary for servicing, removal and overhaul of machinery components and major piping system components (above 100 pounds weight) shall be provided to facilitate shoreside maintenance policy. Padeyes or other assisted lifting devices shall be provided in number, location, and capacity along the equipment access routes to allow movement or removal and replacement of equipment at any point along the route. Padeyes shall meet the requirements of COR Section [611-2](#).
- 071-8.4 [RFP] An equipment removal plan shall be prepared. ([CDRL 085-204](#))

SECTION 073. [RFP] NOISE AND VIBRATION**073-1 [RFP] Definitions**

073-1.1 [RFP] The following definitions are applicable to this COR:

- 073-1.1.1 [RFP] Noise Category - Airborne noise criteria are designated by noise Categories A-3, B, D, F, and G each category is associated with allowable octave band sound pressure levels and an A-weighted sound level limit.
 - 073-1.1.1.1 [RFP] Noise Category A-3 - Spaces where direct voice communication must be understood with minimal error and need for repetition. Category A-3 spaces shall include as a minimum: Combat Information Center, Chart Room, Pilot House, Radio Room, Engineering Control Center, Damage Control Central, Offices, Training Rooms, Medical Spaces.
 - 073-1.1.1.2 [RFP] Noise Category B - Spaces where comfort of personnel is primary consideration and where communication considerations are secondary. Category B spaces shall include as a minimum: Berthing and Living Spaces, Wardroom, Recreation Areas, Lounges, Galley, and Messdeck.
 - 073-1.1.1.3 [RFP] Noise Category D - High noise level area where direct voice communication is not critical, where personal hearing protection is not provided, and prevention of hearing loss is the primary consideration. Category D spaces shall include as a minimum: Auxiliary Machinery Rooms, Workshops (with repair equipment secured), Scullery, and Laundry.
 - 073-1.1.1.4 [RFP] Noise Category F - Topside operating stations where intelligible communication is necessary.
 - 073-1.1.1.5 [RFP] Noise Category G - High noise level areas where prevention of hearing loss is obtained through the use of personal hearing protection. Category G shall be limited to normally unmanned spaces that contain extremely high noise level equipment, such as diesel engines.
- 073-1.1.2 [RFP] Noise Level - Noise levels in this COR refer to the sound pressure levels (SPLs) that describe a particular noise environment.
- 073-1.1.3 [RFP] Noise Reduction - The difference in decibels (dB) between the sound pressure level on either side of a boundary construction is defined as the noise reduction (NR). Unlike transmission loss, noise reduction is dependent not only on the intervening structure but also the source and receiver room acoustic properties. Noise reduction can also refer to the number of db by which sound pressure levels are reduced in a single compartment or at a fixed location because of the introduction of noise control treatments.
- 073-1.1.4 [RFP] Octave - The frequency interval in Hz between two sounds having a frequency ratio of two.
- 073-1.1.5 [RFP] Octave Band - A frequency range bounded by upper and lower frequency limits $f(u)$ and $f(1)$: where $f(u) = 2f(1)$. Octave bands are usually specified by their geometric mean frequency called the band center frequencies. The standard octave bands covering the audible range are designated by the following center frequencies: 31.5, 63, 125, 250, 500, 1000, 2000, 4000 and 8000 Hz. The corresponding upper and lower

frequencies are 22/44, 44/88, 88/177, 177/355, 355/710, 710/1420, 1420/2840, 2840/5680, and 5680/11,360.

073-1.1.6 [RFP] Sound Pressure - The total instantaneous pressure at a point in the presence of a sound wave minus the static pressure at that point.

073-1.1.7 [RFP] Sound Pressure Level - SPL, in db, is 20 times the logarithm to the base 10 of the ratio of the pressure of this sound to a reference pressure. (Standard reference is 0.0002 microbar for airborne sound. Different reference pressures are sometimes used for underwater sound.)

$SPL = 20 \log (P / P_{og})$ db where the reference pressure, P_{og} , is 0.0002 microbar and P is the sound pressure.

073-1.1.8 [RFP] A-Weighted Sound Level (dBA) - A method of representing sound pressure measurements from 10 to 20000 Hz as a single value. Measurements are weighted to emphasize those frequencies most important to hearing ability and de-emphasize those frequencies least important to hearing ability. Measurement is standard feature on all sound level meters and is performed using meters designed according to [ANSI S1.4](#) (Specification for Sound Level Meters).

073-1.1.9 [RFP] C-Weighted Sound Level (dBC) - A method of representing sound pressure measurements from 10 to 20000 Hz as a single value. Measurements are weighted essentially flat over the frequency range. When compared with A weighted measurements, the value identifies how much of the sound level is from low frequency sources. Measurement is standard feature on all sound level meters and is performed using meters designed according to [ANSI S1.4](#) (Specification for Sound Level Meters).

073-1.1.10 [RFP] Hazardous Noise - Any noise level exceeding 84 dB is hazardous and requires the use of hearing protection.

073-2 [RFP] Noise Level Limiting Criteria

073-2.1 [A006] Noise shall not exceed Noise Level Limiting Criteria specified for compartments listed. These sound level requirements shall be met with all machinery and equipment in normal operation including the propulsion plant maintaining required speed, normal ship service lighting, HVAC fans at maximum setting, and steering systems in operation. Category F locations shall be measured under conditions that are representative of the mission performed at that location; e.g. operation of boat launching equipment is to be demonstrated at the maximum ship speed at which the boats would be launched.

Table 073-1

Noise Category	Speed	SPL (dBA)
A-3	All speeds above Loiter Speed	76
A-3	Loiter Speed	70
B	All speeds above Loiter Speed	76
B	Loiter Speed	73

Noise Category	Speed	SPL (dBA)
D	All Speeds	84
F	Application Specific (see above)	75
G	All Speeds	120

Table 073-2

Noise Category	Octave Band Center Frequency, Hz			
	31.5	63	125	250
A-3, B	90	84	79	76
D, F, G	105	100	95	90

Notes

1. The noise level in any one octave band may be exceeded by two (02) decibels for each noise category.
2. In addition to meeting the A-weighted limits in Table 073-1, the low frequencies shall be limited to the levels given in Table 073-2.

- 073-2.2 [RFP] The entrance to any compartments that exceed 84dBA are considered “high noise areas” and shall have a warning sign indicating the presence of a noise hazard with appropriate hearing protection required. Areas that exceed 110dBA shall be labeled "DANGER, NOISE HAZARD AREA - DOUBLE HEARING PROTECTION MUST BE WORN". Labeling shall comply with [ASTM F1166](#).
- 073-2.3 [A009] Hearing Protection - Twenty-two (22) muff type hearing protection devices with a minimum 30dB noise reduction rate and 200 pairs of disposable ear plugs with a minimum 20dB noise reduction shall be provided. An enclosed stowage cabinet or covered stowage boxes for four of the muff type hearing protection devices shall be installed immediately adjacent to the main entrance(s) to machinery spaces with noise levels that can exceed 84dB. A bulkhead mounted dispenser for 200 pairs of disposable ear plugs shall be installed near the main entrance(s) to machinery spaces with noise levels that can exceed 84dB.
- 073-2.4 [RFP] A Noise Control Plan ([CDRL 073-001](#)) shall be submitted that formally describes the shipbuilder’s Noise Control Program. [SNAME T&R Bulletin 3-37](#) provides general requirements for an effective Noise Control Plan. Demonstrated noise levels, and the conditions under which those measurements were obtained shall be compared to the FRC-B noise requirements. Differences between the parent craft design (structural, arrangement, equipment, silencing treatments) and the FRC-B shall be documented. The need for additional noise predictions and silencing actions shall be dependent on this analysis.
- 073-2.5 [RFP] A Noise Control Design History ([CDRL 073-002](#)) shall be submitted to document the noise prediction model (as described in the Noise Control Plan), its results, silencing features, design decisions/rationale, noise survey results, diagnostic measurement results, and resultant silencing actions/effectiveness.

[SNAME T&R Bulletin 3-37](#) shall be used as the basis of airborne noise predictions. HVAC noise predictions shall be in accordance with [ASHRAE Handbook "Heating, Ventilating and Air Conditioning Applications,"](#) Chapt 46.

- 073-2.6 [RFP] An airborne noise survey ([CDRL 073-003](#)) shall be conducted in accordance with [ISO 2923](#). Spaces that exceed the allowable noise levels are to be identified. Diagnostic measurements are to be made to determine the controlling noise sources and transmission paths of spaces that do not meet their noise performance requirements. Corrective actions are to be identified and implemented. Repeat noise surveys are to be made to demonstrate compliance once silencing modifications have been installed. The airborne noise survey is to be made over several representative speeds and operating conditions including full power. Exceptions to ISO 2923 follow: Octave-band, A-weighted, and C-weighted measurements are to be made at each airborne noise measurement location. In berthing spaces, measurements are to be made near the center of the room and at each position that represents a person's head laying prone in a bunk. Additional measurement conditions are to be established as necessary to demonstrate compliance with the noise requirements.

073-3 [RFP] Far Field Noise

- 073-3.1 [RFP] Noise level in the far field, external to the FRC-B, must meet the sound level limit of A-weighted sound level limit of 70 dBA measured when passing a fixed microphone positioned at a height not to exceed 3m (9.8 ft) above the water level with the FRC-B transiting at Loiter Speed on a straight course. The closest point of approach to the microphone shall be 30m (98.4 ft) in the upwind direction. A report shall be prepared ([CDRL 073-003](#)).

073-4 [RFP] Mechanical Vibration

- 073-4.1 [RFP] The FRC-B and all FRC-B components shall be free of local vibration which could damage the FRC-B structure, machinery and/or systems; endanger FRC-B personnel; or interfere with operation or maintenance of FRC-B machinery and/or systems. The term local vibration is defined as the dynamic response of a structural element, deck, bulkhead, machinery or equipment elements which is significantly greater than that of the hull structure at the corresponding frame location, at the same frequency, and in the same direction.
- 073-4.1.1 [RFP] Structural and propulsion systems mechanical vibration shall meet the guidelines provided in [ANSI S2.25](#), [ANSI S2.27](#), and [SNAME T&R 2-29A](#). Maximum allowable vibration levels are given in Table 073-3. A vibration survey ([CDRL 073-004](#)) shall be conducted in accordance with [ISO 4867](#) and [4868](#). Structures that exceed the allowable vibration level shall be identified. Corrective actions shall be identified and implemented. Repeat vibration surveys shall be conducted to demonstrate compliance with the applicable standard.

Table 073-3

Type of Spaces	Maximum Allowable Vibration Levels; Broadband ANSI S3.18 RMS Velocity	
	Loiter Speed	All Speeds Above Loiter
Cabins, Lounges, Offices, Command & Control Spaces	<0.110 in/sec	< 0.165 in/sec

Workshop, Galley, local Control Stations, and Manned Equipment Spaces	< 0.200 in/sec	< 0.300 in/sec
Unoccupied Spaces	< 0.400 in/sec	< 0.500 in/sec
Hull and superstructure vibration in normally occupied spaces, except as noted above, should not exceed a velocity of 0.2 in/sec RMS.		

- 073-4.1.2 [A010] Silencing treatments, including low frequency resilient mounts and Distributed Isolation Material (DIM) isolation mounts, shall be utilized as required to comply with the noise level criteria of 073-2.1 and 073-2.2, or where required to meet vibration requirements of 073-4.1. When used, vibration isolators shall function under the design conditions and design loads for the FRC-B defined in COR Section 070-2.
- 073-4.1.3 [RFP] Removable plates, ladders and gratings shall not rattle. Gaskets shall be used and self-locking fasteners shall be provided to prevent loosening of fasteners under vibration.

073-5 [RFP] Mountings, Resilient Type

- 073-5.1 [RFP] Resilient mountings shall have a captive feature which shall restrain the equipment if the mounting fails.
- 073-5.2 [RFP] All resiliently mounted equipment shall have flexible connections. Resilient elements shall not be painted.
- 073-5.3 [RFP] Selection of resilient mountings and design of the mounting arrangement shall be such that, when any of the six natural frequencies (corresponding to the six degrees of freedom rigid body mode of vibration) of the installed unit fall within the frequency range of propeller blade excitation at 50% or greater propulsion power, these six natural frequencies shall not fall within plus or minus 5 rpm of a hull critical or plus or minus 5 Hz of its foundation fixed-base natural frequency. The Contractor shall provide documentation to support the mounting selection and design for all resiliently mounted masses over 100 Kg. The analysis shall be performed in accordance with [DTMB Report 880](#). (CDRL 073-005)
- 073-5.4 [RFP] Resilient mounting's flexibility shall prevent movement that would endanger the unit or FRC-B under design conditions and design loads defined in COR SECTION 070.
- 073-5.5 [RFP] Clearance shall be provided to prevent the unit from striking structure, adjacent fixed or resiliently mounted units or other objects during maximum deflections of the unit. The portions of piping rigidly attached to a resiliently mounted unit and extending to the flexible connection shall be considered as part of the unit.
- 073-5.6 [RFP] If, in an installation, it is required to place a component on resilient mountings and there is a possibility of misalignment between two or more components connected by shafting, the components shall be mounted on a common sub-base with the resilient mountings installed between the sub-base and the FRC-B's structure. The sub-base shall be of sufficient rigidity to prevent misalignment of the attached units if the sub-base were rigidly supported at three

extreme corner points, (e.g., there was one “soft” corner). This requirement does not apply to the propulsion engines and reduction gears.

- 073-5.7 [RFP] All welding and/or flame-cutting in the vicinity of resilient mountings shall be completed before installation of the mountings.
- 073-5.8 [RFP] Where the age of a resilient mount has exceeded 7 years from the date of manufacture, it shall not be installed aboard the FRC-B prior to a resonant frequency test. The service life of resilient mounts shall commence on the date the mounts are loaded. The loading data shall be stamped on the metal part of the mount adjacent to the mount identification data and shall be visible after installation. Where mounts are inaccessible for inspection after installation, a metal tag incorporating the required data shall be attached to the equipment sub-base or foundation adjacent to the applicable mounts.
- 073-5.9 [RFP] Resilient mounts shall conform to [NAVSEA S9078-AA-HBK-010/DIM](#) and [NAVSEA S9073-A2-HBK-010](#).
- 073-5.10 [RFP] Distributed Isolation Material (DIM)
- 073-5.11 [RFP] Pad type mountings of distributed isolation material (DIM), if used, shall be ISOMODE, manufactured by RD Electronics Division of Gilmore Industries Inc., or FABREEKA, manufactured by FABREEKA Products Co., Inc., or equal.
- 073-5.11.1 [RFP] Products offered shall be equal in the characteristics of:

Set and Creep	+ 0% - 10%
Density	\pm 10%
Damping	\pm 10%
Hardness	\pm 10%
Electrical Isolation	+ 10% - 0%
The material must be impervious to oils used on the craft and resistant to the effects of steam, mildew, and time.	

- 073-5.12 [RFP] DIM shall be loaded to the degree specified by the manufacturer for proper isolation and shall be provided with means to prevent excessive loading resulting from over tightening of mounting bolts. Bolts shall have bushings of material similar to the DIM or Neoprene O-rings to prevent metal-to-metal contact.

073-6 [RFP] Resilient Mount Data

- 073-6.1 [RFP] Where resilient or DIM mountings are installed, the type and quantity of the mounting shall be listed in the bill of material on the foundation drawing.

073-7 [RFP] Rotating Machinery Balance

- 073-7.1 [RFP] Rotating machinery shall be balanced to meet requirements in [ANSI S2.19](#). Qualifying equipment to [MIL-STD-167-1](#) Type 1 vibration is acceptable. The tested equipment shall consist of, but not be limited to, the following items: HVAC machinery, propulsion related auxiliaries, and fire pumps. Some critical components have additional balance requirements that are specified within their respective COR Sections. ([CDRL 073-006](#))

073-8 [RFP] Equipment Environmental Vibration

- 073-8.1 [RFP] Vibration testing shall be conducted in accordance with [ANSI S2.26](#). ANSI S2.26 defines vibration testing requirements for shipboard equipment and machinery components. The standard is used for type testing of the following equipment: propulsion system machinery, control and instrumentation, navigation and communication equipment, mast-mounted equipment, and components. The test is intended to locate resonance of the equipment and impose endurance tests at these frequencies. ([CDRL 073-007](#))

SECTION 074. [RFP] WELDING AND FABRICATION**074-1 [RFP] Scope**

074-1.1 [RFP] This section contains additional requirements for welding, welding filler materials, welding design, workmanship, inspection, forming, castings and record requirements for the hull structure, machinery, piping, and pressure vessels.

074-2 [RFP] General Requirements

074-2.1 [RFP] All welding, brazing and related procedures including, joint design, joint strength calculation, edge preparation, fabrication, welding inspection, qualification, and records shall be in accordance with the [ABS HSNC Guide](#) and this section. For inspection of structural materials and threaded fasteners, see COR SECTION 078 and SECTION 075 respectively.

074-3 [RFP] Qualification Requirements

074-3.1 [RFP] Qualification. - Qualifications shall be in accordance with the [ABS HSNC Guide](#).

074-3.1.1 [RFP] Acceptance of Prior Approvals. If approval is current and satisfactory to the Contracting Officer, re-qualification of procedures, equipment and personnel for which the Contractor has conducted applicable to the requirements of this COR Section is not required. All qualifications shall be made available to the Contracting Officer upon request.

074-3.2 [RFP] Nondestructive Testing (NDT) Procedure Qualification. - A written NDT procedure ([CDRL 074-001](#)) for each method shall be developed and maintained to be used and certify that each procedure is in accordance with the requirements of ABS. Each procedure shall be qualified by proving that known discontinuities can be reliably detected and evaluated. Qualified procedures shall be maintained by the Contractor and provided to the Contracting Officer for review upon request. The Contracting Officer may request demonstration of the procedure during initial review or any time there is reason to believe it is unable to provide adequate results.

074-3.3 [RFP] Qualification of NDT Personnel. - The number of hours of training and experience for all NDT personnel shall be in accordance with [American Society for Nondestructive Testing \(ASNT\) Recommended Practice No. SNT-TC-1A](#). NDT examiners shall be qualified by examinations prepared and administered by ASNT. All qualification data shall be made available to the Contracting Officer upon request.

074-4 [RFP] Welding Quality Control

074-4.1 [RFP] The Contractor shall implement and maintain a welding quality control system ([CDRL 074-002](#)) consisting of, as a minimum, plans, written records and procedures which assign responsibility and provide accountability for fabrication performance and inspection of same. This system shall be approved by ABS.

074-4.2 [RFP] The welding quality control system's written records shall include the following:

074-4.2.1 [RFP] Welding procedure qualification.

074-4.2.2 [RFP] Welder and welding operator qualification.

- 074-4.2.3 [RFP] NDT procedure qualification.
- 074-4.2.4 [RFP] NDT personnel qualification.
- 074-4.2.5 [RFP] Welding filler materials, receipt and inspection records.
- 074-4.2.6 [RFP] NDT records that shall include the following data:
 - 074-4.2.6.1 [RFP] Inspection method.
 - 074-4.2.6.2 [RFP] Part or location inspected.
 - 074-4.2.6.3 [RFP] Test results.
 - 074-4.2.6.4 [RFP] Repairs/rework required.
 - 074-4.2.6.5 [RFP] Re-inspection results.
 - 074-4.2.6.6 [RFP] Identification of person performing inspection.
- 074-4.2.7 [RFP] Destructive Testing (DT) records.
 - 074-4.2.7.1 [RFP] Mill or foundry records are required, showing the chemical and mechanical test results of all plates, shapes, forgings, bars and castings. The records shall document that all required testing was performed and the results found to be satisfactory.
- 074-4.3 [RFP] All fabrications shall be inspected by the Contractor. Records of workmanship inspection shall be documented through a continuous log of accomplishment as the vessel progresses from prefabrication through completion.
- 074-4.4 [RFP] Records required in this section shall be maintained by the Contractor and made available to the Coast Guard throughout the period of FRC-B construction and the FRC-B's warranty period.

074-5 [RFP] Inspection Requirements

- 074-5.1 [RFP] Material Inspection - Material records shall be verified to ensure compliance of the material to the applicable specifications.
- 074-5.2 [RFP] Material Identification - The identification of material shall be maintained to the point of initial fabrication in accordance with a written procedure developed by the Contractor.
- 074-5.3 [A010] Visual Inspection - Structural welding shall receive 100% visual inspection for contour, size and quality in accordance with the welding quality control system required in COR Section 074-4.2.
- 074-5.4 [RFP] Nondestructive Inspection - Nondestructive inspection shall be performed using written procedures and personnel qualified in accordance with this COR Section.

074-6 [RFP] Welding Filler Materials

- 074-6.1 [RFP] Unless otherwise approved by the Contracting Officer, welding electrodes, bare filler wire, flux cored wire, and wire-gas combinations shall be ABS approved for the base material to be joined, position to be employed, current polarity and electrode size to be used.

074-7 [RFP] Hull Structure Welding Design

- 074-7.1 [RFP] Hull structure welding design shall meet the requirements of the [ABS HSNC Guide](#) for weld design and shall ensure that intermittent fillet welded joints are not used in the primary hull structure or areas where the welded joint is exposed to water or weather.

074-8 [RFP] Structural Castings

- 074-8.1 [RFP] Castings shall be constructed in accordance with [ABS HSNC](#) or [MIL-STD-1689](#).
- 074-8.2 [RFP] Casting NDT Requirements. - The casting designer shall be responsible for implementing the requirements and identifying the areas requiring NDT.
- 074-8.3 [RFP] Drawings for castings shall include the following information:
- 074-8.3.1 [RFP] Material specification or chemical composition of material.
 - 074-8.3.2 [RFP] Required mechanical properties.
 - 074-8.3.3 [RFP] Pressure test or proof test, if required.
 - 074-8.3.4 [RFP] NDT requirements.
 - 074-8.3.5 [RFP] Identification markings.

SECTION 075. [RFP] THREADED FASTENERS**075-1 [RFP] General Requirements**

- 075-1.1 [RFP] Mechanical fasteners shall be in accordance with [MIL-DTL-1222](#) (critical applications, [SAE-J2270](#), [SAE-J2280](#) and [SAE-J2295](#).
- 075-1.2 [RFP] Threaded connections shall not be made by tapping aluminum or FRP structural components. CRES threaded inserts shall be used in aluminum and FRP when direct threading is required.
- 075-1.3 [RFP] Bolts and machine screws of 10mm (0.39 in) in diameter or greater shall be used for structural applications. Bolt hole diameters shall not exceed bolt diameters by more than 1mm (0.039 in) for bolts up to and including 15mm (0.59 in) in diameter and 2mm (0.079 in) for bolts over 15mm (0.59 in) in diameter. Male threads on fasteners shall protrude at least one (1) thread beyond the top of the nut or plastic locking element. Where practical, the number of threads protruding shall not exceed five (5) threads and in no case shall thread protrusion exceed ten (10) threads. The use of special high strength fasteners shall be avoided. One washer, per [ASME B18.22.1](#), shall be used under each nut.
- 075-1.4 [RFP] Where hardware, such as joiner hardware and hinges, is pre-drilled, the size of fasteners used shall match the size of the pre-drilled holes in the part.
- 075-1.5 [RFP] Fasteners for metal parts shall be of a similar material as the part except that fasteners in aluminum shall be 302 or 304 CRES. Brass fasteners shall not be used in aluminum. Aluminum shall be through bolted wherever practicable. The material for the threaded insert shall be 302 or 304 CRES. Fasteners that are subject to sea water or spray shall be 316 CRES. Galling and seizing of threads shall be precluded by material selection practices. Where NICU and CRES thread combinations are unavoidable differences of 30 brinell hardness points in material hardness and/or coatings may be used to limit the potential for galling.
- 075-1.6 [RFP] Cadmium plated fasteners, including washers, shall not be used.
- 075-1.7 [RFP] Where nuts will become inaccessible after assembly of the FRC-B, nuts shall be captured to prevent backing off. Unless otherwise specified, self-locking nuts of plastic insert type or all-metal self-locking nuts of distorted type shall be provided to prevent loosening of hold-down bolts caused by shock or vibration. Bolts shall be inserted from the bottom of the foundation with the nut on top. This will aid in detecting loose mounting bolts.
- 075-1.8 [RFP] In the assembly of machinery subjected to large reversing stresses and where alignment must be maintained (such as independent thrust bearings, screw gear and hydraulic cylinders of steering equipment), fitted bolts, keys, or dowel pins may be used to withstand the forces tending to shift the unit on its foundation. Propulsion machinery and auxiliary machinery which exert loadings on foundations shall be secured by means approved by the manufacturer of the machinery.
- 075-1.9 [RFP] All fasteners which could create a tripping or snagging hazard shall be flush mounted to eliminate the hazard where possible.
- 075-1.10 [RFP] Where the strength of a mechanical connection is critical for the safe operation of the vessel or proper operation of components or equipment and

improper tightening of the fasteners would reduce the integrity of the connection, the torque, tolerances and sequence (if applicable) shall be specified on the installation, assembly or component drawings.

- 075-1.11 [RFP] Screw holes in FRP shall be pre-drilled. Screws installed in FRP shall be dipped in resin and the hole coated with resin prior to installation. FRP shall be through bolted or utilize threaded inserts. As necessary, back-up plates shall be provided to reduce load concentrations and minimize the potential for fastener pull through.
- 075-1.12 [RFP] Fasteners shall be identified in all drawings, Technical Manuals and Logistic Support Documentation.

SECTION 076. [RFP] RELIABILITY, MAINTAINABILITY AND AVAILABILITY**076-1 [RFP] General**

- 076-1.1 [RFP] Reliability, maintainability and availability information and data shall be developed and provided in accordance with the parameters and requirements provided by this COR.

076-2 [RFP] Definitions

- 076-2.1 [RFP] Failure – Any malfunction or combination of malfunctions that prevent an equipment/system from operating in one or more modes of operation in accordance with the performance requirements.
- 076-2.2 [RFP] Critical Failure – Any failure which prevents the FRC-B from performing an assigned primary mission.
- 076-2.3 [RFP] Major Failure – Any failure which degrades operational capability or mission accomplishment.
- 076-2.4 [RFP] Non-failure – Any malfunction or combination of malfunctions that is not classified as a failure.
- 076-2.5 [RFP] Maintainability – The ability of an item to be retained in or restored to a specified condition when maintenance is performed by personnel having specified skill levels, using prescribed procedures and resources, at each prescribed level of maintenance and repair.
- 076-2.6 [RFP] Mean Time Between Failure (MTBF) – The mean number of life units (hours) during which mission essential parts of the item perform within their specified limits under stated conditions. Only corrective maintenance failures are considered when calculating the MTBF value. MTBF values used for Availability Calculations shall be the lower end of a 95% two sided confidence interval (chi-squared) for systems that exhibit exponential probability density functions for reliability. MTBF values used for Availability Calculations shall be the 95% reliability age for systems that exhibit Gaussian normal probability density functions for reliability. MTBF values shall be the characteristic life parameter for Availability calculations on systems that exhibit Weibull Probability Density Functions for reliability.
- 076-2.7 [RFP] Mean Time Between Critical Failure (MTBCF) – The mean number of life units (hours) of a critical item which fail and prevents the FRC-B from performing its primary missions. MTBCF values used for Availability Calculations shall be the lower end of a 95% two sided confidence interval (chi-squared) for systems that exhibit exponential probability density functions for reliability. MTBCF values used for Availability Calculations shall be the 95% reliability age for systems that exhibit Gaussian normal probability density functions for reliability. MTBCF values shall be the characteristic life parameter for Availability calculations on systems that exhibit Weibull Probability Density Functions for reliability.
- 076-2.8 [RFP] Mean Logistics Delay Time (MLDT) – The mean time spent waiting for parts or supplies required to correct a failure.
- 076-2.9 [RFP] Mission Critical Equipment – Equipment which contributes to the functional tasks of at least one of the primary mission areas.

- 076-2.10 [RFP] Mean Time To Repair (MTTR) – The average corrective maintenance (CM) time required to correct a failure, restoring the equipment to a fully operational state. MTTR does not include downtime periods due to preventive maintenance time, logistics delay time or administrative delay time.
- 076-2.11 [RFP] Operational Availability (A_o) – The probability that the FRC-B is able to fulfill primary mission requirements at any random point in time.
- 076-2.12 [RFP] Primary Missions – Primary mission requirements include Enforcement of Laws and Treaties (ELT): International/Domestic Living Marine Resources Enforcement, Drug Interdiction, and General Law Enforcement as well as Search and Rescue (SAR). General Law Enforcement includes Alien Migrant Interdiction Operations (AMIO), Boating While Intoxicated Enforcement (BWI), Recreational and Commercial Marine Safety, Pollution Prevention and Violation Enforcement, and protection of Marine Sanctuaries.
- 076-2.13 [RFP] Reliability – The probability that an item can perform its intended function for a specified period under stated conditions.

076-3 [RFP] Design Reliability, Maintainability and Availability (RMA) Requirements and Analysis

- 076-3.1 [RFP] Design criteria shall be established to minimize the maintenance labor-hours required to achieve the required availability for the FRC-B. The criteria shall include visual and physical accessibility, adequate workspace, work clearance for maintenance, compatibility with automatic test equipment (ATE), training requirements, and support equipment (including calibration if applicable).
- 076-3.2 [RFP] The FRC-B shall have an operational availability (A_o) of 85% (.85).
- $$A_o = \frac{MTBCF}{(MTBCF + MTTR + MLDT)}$$
- 076-3.3 [RFP] A design RMA Analysis shall be planned, prepared, and conducted that verifies the allocated subsystem and equipment RMA requirements satisfy the system RMA requirements of the COR.
- 076-3.3.1 [RFP] The RMA analysis shall be performed using [MIL-STD-721C](#) and [MIL-STD-756B](#) as guides. Additional guidance on the RMA process may be found in [DoD 3235.1-H](#), "Department of Defense Test & Evaluation of System Reliability Availability and Maintainability - A Primer". Ensure the analysis:
- 076-3.3.1.1 [RFP] addresses all mission critical systems and equipment,
- 076-3.3.1.2 [RFP] provides the mean time between failure (MTBF) and mean time to repair (MTTR) for the major components of each mission critical system/equipment,
- 076-3.3.1.3 [RFP] provides a graphical reliability block diagram identifying components, redundancy, MTBF, and MTTR characteristics. The reliability block diagram shall be prepared to show a concise visual shorthand of the various series-parallel block combinations (paths) of components that are required for mission success. The reliability block diagram shall provide the basis for accurate mathematical representation of Mission Reliability and Operational Availability.
- 076-3.3.1.4 [RFP] provides a basic and mission reliability prediction.

- 076-3.3.1.5 [RFP] provides an FRC-B mission operational availability prediction, utilizing a graphical reliability block diagram configuration and composite mission profile acceptable to the Contracting Officer.
- 076-3.3.2 [RFP] The RMA analysis shall be prepared and delivered in accordance with [CDRL 076-001](#).
- 076-3.3.3 [RFP] The data developed during this RMA analysis shall be used to support the Reliability Centered Maintenance (RCM) analysis process required in COR SECTION 080.
- 076-3.3.4 [RFP] A Level of Repair Analysis (LORA) shall be provided in accordance with, [DOD OPNAV 4410.2A](#) and [MIL-PRF-49506](#) to determine O, and D level maintenance tasks, [CDRL 076-002](#).

SECTION 077. [RFP] SYSTEM SAFETY PROGRAM**077-1 [RFP] General**

- 077-1.1 [A010] A System Safety Program will be implemented and conducted during the design and construction of the lead FRC-B. The program shall be planned, implemented, and maintained in accordance with [MIL-STD-882D](#) and [CDRL 077-001](#). The System Safety Program shall conduct hazard analyses and studies to identify hazards associated with shipboard areas, equipment, systems and interfaces per the FRC-B System Safety Plan. The System Safety Program shall develop mitigation plans for all identified hazards to reduce the probability of occurrence to an acceptable level of risk within constraints of mission requirements.
- 077-1.2 [RFP] The order of precedence for developing solutions to identified hazards shall be as follows:
- 077-1.2.1 [RFP] Design to eliminate or control hazards. If an identified hazard cannot be eliminated, hazards shall be controlled through design.
- 077-1.2.2 [RFP] Provide safety devices. Hazards that cannot be eliminated or controlled through design shall be controlled through the use of safety features. Provisions shall be made for periodic functional checks of safety features.
- 077-1.2.3 [RFP] Provide warning devices. When neither design nor safety features eliminate or control an identified hazard, devices shall be used to detect the condition and to produce an adequate warning to alert personnel of the hazard. Warning signals and their application shall be designed to minimize the probability of incorrect personnel reaction to the signals.
- 077-1.2.4 [RFP] Provide training. Where it is impossible to eliminate or adequately control a hazard through design, safety features, or warning devices, procedures and training shall be identified to control the hazard.
- 077-1.3 [A013] A hazard analysis shall be conducted in accordance with MIL-STD-882D and reported in [CDRL 077-005](#).
- 077-1.4 [A013] Closed Loop Hazard Tracking. A Closed Loop Hazard Tracking System Database ([CDRL 077-002](#)) shall be established and maintained in order to maintain records of all identified hazards and any actions that are taken to mitigate or avoid risks.
- 077-1.5 [A013] Weapons System Safety Review. A safety review of weapons systems shall be conducted. ([CDRL 077-003](#)) Physical audits shall be performed as required before delivery of the cutter to ensure weapons system safety features are incorporated during construction. The safety analysts shall function within the design team and interface with weapons manufacturers to ensure that safety concerns are adequately resolved during the cutter design. The weapons safety review shall be performed in accordance with [NAVSEAINST 8020.6D](#).

077-2 [RFP] Material Safety Data Sheets (MSDS)

- 077-2.1 [RFP] A Material Safety Data Sheet (MSDS) shall be provided for each hazardous material proposed for use in the FRC-B, in accordance with the latest version of Federal Standard No. 313 (Material Safety Data Sheet, Preparation and Submission of), including revisions adopted during the term of the contract.

The Contractor shall also provide a MSDS for any other material deemed by the Contractor or designated by a Government technical representative as potentially hazardous and requiring safety controls. The MSDS shall be submitted in support of and in conjunction with the documents that propose the use of the material, specifically including detailed design review submissions and engineering change proposal submissions. In addition, the Contractor shall prepare and submit a MSDS Book in accordance with [CDRL 077-004](#).

SECTION 078. [RFP] MATERIALS**078-1 [RFP] General**

- 078-1.1 [RFP] This Section specifies additional material standards and dissimilar metal restrictions. Material requirements stated in other Sections of this COR which are in excess of the requirements of this Section shall have precedence over the requirements of this Section. Any conflicts between ABS HSNC and COR material requirements shall be brought to the attention of the Contracting Officer for adjudication.
- 078-1.2 [RFP] Wherever more than one material is available to meet the requirements of the COR, material providing reduced maintenance shall be used.

078-2 [RFP] Materials

- 078-2.1 [RFP] Materials shall be selected for the service intended, and unless specified elsewhere, materials shall conform to the following:
- 078-2.1.1 [RFP] Copper
- 078-2.1.1.1 [RFP] Tube Commercial type K
- 078-2.1.2 [RFP] Copper-Nickel Alloy
- 078-2.1.2.1 [RFP] Rod and flat products [ASTM-B-122](#), alloy C71500
- 078-2.1.2.2 [RFP] Tube [ASTM-B-111](#), alloy C71500
- 078-2.1.2.3 [RFP] Sheet 90-10 alloy and 10-90 alloy
- 078-2.1.3 [RFP] Nickel-Copper Alloy
- 078-2.1.3.1 [RFP] Rod, sheet, Sections [ASTM-B-164](#), or ASTM-B-127
- 078-2.1.4 [RFP] Aluminum
- 078-2.1.4.1 [RFP] Tube [ASTM-B-221](#) (Extruded) 5086-H111;
[ASTM-B-210](#) (Drawn) 5086-H32
- 078-2.1.4.2 [RFP] Plate and Sheet [ASTM-B-209](#) Alloy 5086-H116
or Alloy 5456-H116
- 078-2.1.4.3 [RFP] Shapes [ASTM-B-221](#)(Extruded) Alloy 5086-H111
or Alloy 5456-H111
- 078-2.1.4.4 [RFP] Alloy 5052 of [QQ-A-250/8](#) may be used for unwelded sheathing, expanded aluminum and trim for thickness less than 3mm.
- 078-2.1.4.5 [RFP] Alloy 6061-T6 of [ASTM-B-241](#) may be used for pipes as structural components when they are not welded.
- 078-2.1.4.6 [RFP] Non-structural items of trim and outfit such as window and door frames, castings, and hardware items may be alloy 6063 or alloy 6061 of [ASTM-B-221](#) or alloy 356.1, 356.2 or A356.2 of [ASTM-B-179](#).
- 078-2.1.5 [RFP] CRES
- 078-2.1.5.1 [RFP] CRES ASTM Stainless steel 316L shall be used for fittings, couplings etc. on all exterior applications of the FRC-B above and below the waterline on the hull that are exposed directly to sea water or spray and for all applications on the weather decks unless stated elsewhere in

this COR. Use of 302 or 304 is restricted to interior, non-welded applications where exposure to sea water is not anticipated.

- 078-2.1.5.1.1 [RFP] Wrought [AISI 316L](#), [AISI 302](#) or [304](#)
- 078-2.1.5.1.2 [RFP] Pipe or Tubing [ASTM-A-312](#), Grade 316L
- 078-2.1.6 [RFP] Ordinary Strength Steel
 - 078-2.1.6.1 [RFP] Plate (greater than 3mm) [ASTM-A-131](#) Grade B or ABS Grade A
 - 078-2.1.6.2 [RFP] Sheet (3mm or less) [ASTM-A-109](#) or ABS Grade A
 - 078-2.1.6.3 [RFP] Forgings [ASTM-A-668](#), Class C or ABS Grade 2
 - 078-2.1.6.4 [RFP] Bars and Shapes [ASTM-A-131](#) Grade B or ABS Grade A
 - 078-2.1.6.5 [RFP] Steel Pipe [ASTM-A-53](#) or [ASTM-A-106](#) Grade B
- 078-2.1.7 [RFP] High Strength Steel ABS Grade AH 36 or:
 - 078-2.1.7.1 [RFP] Plate [ASTM-A-572](#) Grade 50
 - 078-2.1.7.2 [RFP] Sheet [ASTM-A-607](#) Grade 50 Class 1
 - 078-2.1.7.3 [RFP] Bars and Shapes [ASTM-A-572](#) Grade 50 or [ASTM-A-588](#) Grade A
- 078-2.1.8 [RFP] Fiber Reinforced Plastic (FRP)
 - 078-2.1.8.1 [RFP] Structural Laminates See COR Section 078-3
 - 078-2.1.8.2 [RFP] Pipe In accordance with [MIL-P-24608A](#)

078-3 [RFP] Materials for FRP Laminates

- 078-3.1 [RFP] Laminating Resins
 - 078-3.1.1 [RFP] No styrene shall be added to the resin in excess of that recommended by the resin manufacturer. Dilutents may be added to the resin to aid with infusion but must comply with the resin manufacturer's recommendations.
 - 078-3.1.2 [RFP] Gel coat resins shall be of the clear, fire-retardant, type compatible with laminating resins. Gel coat resin shall be impact resistant and resilient.
 - 078-3.1.3 [RFP] Resin materials must be selected to be compatible with the reinforcing and core materials selected.
- 078-3.2 [RFP] Reinforcing Materials
 - 078-3.2.1 [RFP] Fiberglass cloth shall conform to [MIL-C-9084](#).
 - 078-3.2.2 [RFP] Fiberglass Woven roving (WR) shall conform to [MIL-C-19663](#).
 - 078-3.2.3 [RFP] Fiberglass Mat shall conform to [MIL-M-43248](#), Type 1, Class 1.
 - 078-3.2.4 [RFP] Aramid cloth (tradename Kevlar) shall conform to SAE/ANSI Standard [AMS 3901](#) and the appropriate detailed SAE/ANSI specification for the cloth weave selected.
 - 078-3.2.5 [RFP] The surface treatment of the reinforcing materials (sizing or surface finish) shall be compatible with the resin system.
- 078-3.3 [RFP] Core Materials

- 078-3.3.1 [RFP] Scrim backing for balsa core material shall be compatible with the resin system, and shall not be included in any strength calculations. Balsa core materials, if used, shall be pre-coated with resin prior to installation. Balsa core shall not be used for hull weather decks.
- 078-3.3.2 [RFP] Honeycomb cores, if used, shall be manufactured of aluminum, phenolic resin impregnated fiberglass or aramid fiber phenolic treated paper and shall be fire retardant. Cell sizes shall be no smaller than 1/8", and no greater than 3/8".

078-4 [RFP] Miscellaneous Requirements

- 078-4.1 [RFP] Galvanizing shall be done by the hot dip process and shall meet the requirements of [ASTM-A-153](#). The zinc shall be at least 98% pure.
- 078-4.2 [RFP] Interior finish material and furnishings shall conform to fire performance requirements of [MIL-STD-1623](#).
- 078-4.3 [RFP] Wood in any form shall not be used except as a core material in FRP construction.
- 078-4.4 [RFP] Materials which contain asbestos and refractory fiber materials (also termed ceramic fiber and aluminum-silica material) shall not be used.

078-5 [RFP] Electrolytically Dissimilar Metals and Corrosion Protection

- 078-5.1 [RFP] Direct contact of electrolytically dissimilar metals is not allowed. Electrolytic corrosion shall be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, and bushings of Neoprene, EC-1202, Permagum, Fairprene, Presstite, or Micarta insulating material.
- 078-5.2 [RFP] Direct contact between aluminum alloys and porous material, pockets, crevices and joints that can retain moisture is not allowed. Aluminum alloy surfaces intended for contact with porous material shall be coated. Joints and crevices shall be sealed with caulking compound, [MIL-C-18255](#). Pockets too large to be caulked shall be coated.
- 078-5.3 [RFP] Lead graphite pencils shall not be used to mark uncoated aluminum.
- 078-5.4 [RFP] Copper alloys shall not be attached to aluminum.
- 078-5.5 [RFP] The method for joining steel to aluminum in exposed locations shall be [Duratemp II](#), [DETACOUPLE](#), or by an equal bi-metallic strip bonding system in accordance with [MIL-J-24445A](#).
- 078-5.6 [RFP] Aluminum alloys shall be isolated from dissimilar metals. Areas of application for each insulating material are listed below and are for guidance and, except where noted, are generally interchangeable.
- 078-5.6.1 [RFP] In dry, unexposed areas, use gasket material, pressure sensitive adhesive [A-A-59588](#), [MIL-I-24391](#).
- 078-5.6.2 [RFP] For watertight joints, seam caulking and sealing surfaces, use polysulfide compounds, or epoxy/amine [MIL-PRF-23236C](#), Class 1.
- 078-5.6.3 [RFP] The use of a laminate such as Melamine, Laminated Micarta, Formica or equivalent, together with an epoxy/amine [MIL-P-23236](#), Class 1 is permitted.

- 078-5.7 [RFP] The manufacturer's recommended procedures shall be followed when polysulfide compounds or epoxy/amine are used as an insulating material in joints exposed to moisture.

078-6 [RFP] Toxic Products and Safety

- 078-6.1 [RFP] Paint, insulation, adhesives or other items containing materials or components that would give off noxious fumes at any temperature below 203°F shall not be installed or applied on hull structural materials. For paints and adhesives, this requirement applies after drying or curing is complete. In accordance with [COMDTINST 6260.30A](#), one-part polyurethane coating systems, caulking, and adhesive materials (moisture-cured or heat-cured) may be used, such as [3M 5200](#) and [Sikaflex 291](#) and [Boatlife Life Caulk](#) are acceptable.
- 078-6.2 [RFP] All materials shall meet applicable ASTM standards with respect to fire safety.
- 078-6.3 [RFP] Permission of the Contracting Officer shall be obtained prior to using lead during any phase of the construction of the FRC-B.
- 078-6.4 [RFP] Any plastics or composite materials shall meet the requirements of ASTM for shipboard use.

078-7 [RFP] Mercury Exclusion

- 078-7.1 [RFP] Mercury, either undiluted or in solution in as small a portion as one part per million, will cause severe corrosion to aluminum. In order to protect the craft from contamination the Contractor shall restrict the use of equipment containing functional mercury during construction or installed on board the craft to items such as fluorescent lights or mercury batteries contained in electrical test instruments and permanently installed instruments, sensors and controls required by this COR.
- 078-7.2 [RFP] Functional mercury in equipment shall be potted, or otherwise sealed, and the sealed unit contained within a secondary barrier to prevent contamination of the aluminum in case of rupture of the sealed unit.
- 078-7.3 [RFP] Functional mercury is mercury or mercury compounds required for proper operation of a component or, without the presence of which, the component would fail to operate properly.
- 078-7.4 [RFP] The approval of the Contracting Officer is required for the utilization of any equipment containing mercury or mercury compounds, to be carried or installed on board the craft, not excepted above.

SECTION 079. [RFP] STABILITY AND SEAKEEPING**079-1 [RFP] General**

- 079-1.1 [RFP] The FRC-B shall meet the seakeeping and the specific stability requirements of this COR Section.
- 079-1.2 [RFP] The wave spectrum (Pierson - Moskowitz Sea Spectrum) for the purposes of this COR is defined in Table 79-1.

Table 79-1

Sea State	Significant Wave Height (SWH, m)	Significant Period (sec)	Average Period (sec)	Average Length (m)
3	1.2	2-7	4	16
4	2.5	3 – 10	5.5	30.5
5	4	4 - 12	7	49
6	6	5 – 15.5	9	79.25

079-2 [RFP] Stability Analysis

- 079-2.1 [RFP] The Contractor shall perform all calculations and prepare all documentation in accordance with COR SECTION 085 to demonstrate the FRC-B complies with the stability requirements described in this Section.

079-3 [RFP] Intact and Damage Stability

- 079-3.1 [RFP] The FRC-B shall meet the Intact and Damage Stability and reserve buoyancy requirements in accordance with “Procedures Manual for Stability Analyses of U.S. Navy Small Craft, [NAVSEACOMBATSYSSENGSTA Report No. 6660-99 Rev A](#) for Ocean Service, vessels expected to avoid centers of tropical disturbances.
- 079-3.1.1 [RFP] The FRC-B shall withstand the intact criteria at 70 knots beam wind and the damage stability criteria in all load conditions with and without service life margin specified in the Procedures Manual for Stability Analyses of U.S. Navy Small Craft, NAVSEACOMBATSYSSENGSTA Report No. 6660-99 Rev A May 1988 for Ocean Service. Calculations shall be provided for intact and damage stability analysis ([CDRL 085-013](#)).
- 079-3.1.2 [A010] Margin Line shall be considered in the damage stability analysis in accordance with [46 CFR Section 171.015](#).
- 079-3.1.3 [A010] For the damage stability analysis and floodable length analysis, the minimum size of a watertight compartment length, longitudinally main subdivision bulkhead to main subdivision bulkhead, shall be 10% of LBP or 6ft, whichever is greatest.
- 079-3.1.4 [RFP] Topside Icing shall be considered in the intact stability analysis.
- 079-3.1.5 [RFP] Towline pull shall be considered in the intact stability analysis in accordance with [DDS 079-1](#) to determine limiting power.

079-3.1.6 [RFP] Cross Connection of Tanks. Cross connection of tanks shall only be employed where other alternatives have been evaluated and are deemed impracticable. Where cross connection of tanks are utilized, the following applies:

079-3.1.6.1 [RFP] The cross flooding system shall prevent transference of liquids from one tank to the other during normal rolling of the cutter.

079-3.1.6.2 [RFP] Cross flooding times shall not exceed five (5) minutes.

079-3.1.6.3 [RFP] Prior to cross flooding the following criteria shall be met:

079-3.1.6.3.1 [RFP] Heel shall not exceed 20°.

079-3.1.6.3.2 [RFP] Area A1/A2 greater than or equal to 1.4 (see [DDS 079-1](#) for definitions of A1 & A2).

079-3.1.6.3.3 [RFP] Area A1 \geq 5 ft-degree.

079-3.1.6.3.4 [RFP] $RA_{max} - HA \geq 0.25$ ft.

079-4 [RFP] Trim and List Limits

079-4.1 [A010] The list in Full Load and Minimum Operating Conditions shall not exceed one-half degree from the vertical. The total static trim in Full Load and Minimum Operating Conditions shall not be more than 1.0% of the load waterline length by the stern or 0.3% of the load waterline length by the bow from zero trim relative to the baseline. The use of ballast to correct the FRC-B's VCG, LCG and TCG shall not be allowed. In determining the Contractor's responsibility, the values of displacement, VCG, LCG and TCG shall be based on the inclining experiment performed in accordance with COR SECTION 097.

079-4.2 [RFP] Limiting Drafts shall be calculated for the FRC-B in accordance with [DDS 079-1](#). ([CDRL 085-013](#))

079-5 [RFP] Stability and Loading Data Booklet

079-5.1 [RFP] A Stability and Loading Data Booklet ([CDRL 079-001](#)) shall be provided. The calculations necessary to produce this booklet shall be performed.

079-6 [RFP] Seakeeping Limiting Constraints

079-6.1 [RFP] The FRC-B shall be configured to minimize effects of heave (vertical) acceleration, pitch, roll, slamming and deck wetness upon operator performance. Heave (vertical) acceleration, pitch and roll shall be minimized at the command and control station in the pilothouse.

079-6.2 [RFP] A seakeeping analysis shall be performed in accordance with [CDRL 085-012](#). The Seakeeping Analysis shall quantify seakeeping characteristics and verify the FRC-B's capability to comply with the requirements. The analysis shall include Seakeeping Performance Indices and Polar Plots which apply the motion limits for transiting, and boat launch and recovery as stated in the requirements. The following seakeeping limiting response criteria shall be used as threshold values associated with the environmental conditions for loiter, transit and boat operations described in table 70-1:

079-6.2.1 [RFP] Deck Wetness: <30 average occurrences per hour on the main deck

079-6.2.2 [RFP] Slamming: <20 occurrences per hour

- 079-6.2.3 [RFP] Vertical Acceleration: <0.4g Significant Single Amplitude (SSA) at manned watch stations
- 079-6.2.4 [RFP] Lateral Acceleration: <0.2g SSA at manned watch stations

SECTION 080. [RFP] INTEGRATED LOGISTICS SUPPORT**080-1 [RFP] Integrated Logistic Support (ILS) Program**

- 080-1.1 [RFP] An ILS program shall be implemented that ensures vessel supportability criteria and characteristics are equally and thoroughly integrated into the cutter design, systems integration, construction, testing, and life cycle support planning processes. This includes:
 - 080-1.1.1 [RFP] Maintenance Planning
 - 080-1.1.2 [RFP] Manpower and Personnel
 - 080-1.1.3 [RFP] Supply Support
 - 080-1.1.4 [RFP] Technical Data
 - 080-1.1.5 [RFP] Support and Test Equipment
 - 080-1.1.6 [RFP] Training and Training Support (includes Familiarization Plan and Schedule)
 - 080-1.1.7 [RFP] Computer Resources Support
 - 080-1.1.8 [RFP] Facilities
 - 080-1.1.9 [RFP] Packaging, Handling, Storage and Transportation (PHS&T)
 - 080-1.1.10 [RFP] Design Interfaces
- 080-1.2 [RFP] The ILS Program shall be implemented in accordance with the parameters and requirements provided by this COR, applicable CDRL items and the following:
 - 080-1.2.1 [RFP] Maximum use of existing Coast Guard or DOD logistics support resources to provide maximum commonality and to reduce new ILS requirements and life-cycle costs.
 - 080-1.2.2 [RFP] Definition of all CFE/GFE logistics requirements.
 - 080-1.2.3 [RFP] A supportable and maintainable FRC-B design within existing Coast Guard personnel constraints.
 - 080-1.2.4 [RFP] Integration of ILS tasks through procurement specifications and CDRLs.
 - 080-1.2.5 [RFP] Establishing and maintaining liaison with the FRC Integrated Logistics Support Management Team (ILSMT).
 - 080-1.2.6 [RFP] Design reviews that take action to ensure achievement of optimum maintenance and support characteristics without duplication or redundancy of efforts relative to design and logistics.
 - 080-1.2.7 [RFP] Evaluate logistics impacts of engineering changes prior to change submission to the Government.
 - 080-1.2.8 [RFP] Periodic ILS/Configuration status reports.
 - 080-1.2.9 [RFP] Configuration control of ILS/Configuration documentation.
- 080-1.3 [RFP] The Contractor shall host Quarterly Integrated Logistics Support meetings in conjunction with the Quarterly Production Progress Conferences (QPPCs). An

agenda and minutes shall be provided in accordance with CDRLS [042-002](#) and [042-003](#). These meetings shall cover at a minimum the following:

- 080-1.3.1 [RFP] Configuration Status Accounting (COR SECTION 041).
- 080-1.3.2 [RFP] Reliability, Maintainability and Availability (COR SECTION 076).
- 080-1.3.3 [RFP] Maintenance Support (COR SECTION 081).
- 080-1.3.4 [RFP] Supply Support (COR SECTION 083).
 - 080-1.3.4.1 [RFP] Provisioning Technical Documentation (PTD).
 - 080-1.3.4.2 [RFP] Outfitting and Spares.
- 080-1.3.5 [RFP] Technical Data (COR SECTION 086).
 - 080-1.3.5.1 [RFP] Equipment Technical Manuals.
 - 080-1.3.5.2 [RFP] System and Cutter Information Books & Manuals.
 - 080-1.3.5.3 [RFP] Drawings.
- 080-1.3.6 [RFP] Human Factors Engineering (COR SECTION 088).
- 080-1.3.7 [RFP] Training and Training Support (COR SECTION 089).
- 080-1.4 [RFP] An iterative system engineering approach shall be used that will ensure the logistics data products are continually updated and reflects the configuration of the FRC-B as designed and delivered. The contractor shall ensure the ILS Program closely integrates with the Reliability, Maintainability and Availability (RMA) analysis required under COR Section 076-3.3. In developing the ILS Program, all mission constraints, the availability profile, and the areas of operations shall be fully considered.
- 080-1.5 [RFP] Integrated Support Plan (ISP). An ISP shall be developed and delivered in accordance with [CDRL 080-001](#). The ISP shall describe the contractor's plans for providing data and tasks for logistics support for the cutter, and contractor internal controls that will be employed to ensure quality products are provided and schedules are met. [MIL-HDBK-502](#) and [MIL-PRF-49506](#) shall be utilized in developing this plan.
 - 080-1.5.1 [RFP] The Contractor shall recommend and develop logistic support for each ILS element consistent with each other and consistent with the FRC-B's operational and maintenance requirements as determined by COR SECTION 076 RM&A and SECTION 081 Maintenance.
 - 080-1.5.2 [RFP] The Contractor shall detail the method of integrating availability and maintainability considerations in COR SECTION 076 to produce cost-effective support for the cutter.

SECTION 081. [RFP] MAINTENANCE**081-1 [RFP] General**

- 081-1.1 [RFP] Maintenance planning shall be integrated with the FRC-B design, reliability and maintainability, manpower optimization, human performance factors, material selection, and other logistics processes. The FRC-B shall be designed and constructed to minimize maintenance requirements. This requirement shall not supersede specific performance, design, construction, or warranty requirements.
- 081-1.2 [RFP] When conducting trade-off analysis, preference shall be given to the following considerations:
- 081-1.2.1 [RFP] Labor and cost savings due to automated and self-diagnostic equipment.
 - 081-1.2.2 [RFP] Labor and cost savings due to modular replacement equipment (versus piece-part repair).
 - 081-1.2.3 [RFP] Labor and cost savings due to reduced facility maintenance with increased corrosion resistance.

081-2 [RFP] Coast Guard Maintenance Philosophy for the FRC-B

- 081-2.1 [RFP] This section briefly describes the Coast Guard's maintenance philosophy for the FRC-B. This philosophy shall be applied when designing the FRC-B and its support systems.
- 081-2.2 [RFP] The FRC-B will be maintained using existing Coast Guard, commercial, and Other Government Agency (OGA) facilities. Cutter COs have the overall responsibility for scheduling maintenance for their individual cutters. Assistance in performing maintenance will be provided, as appropriate, by Coast Guard Naval Engineering Support Units, Electronics Support Units, Integrated Support Commands, Maintenance and Logistics Commands, other Government or commercial support organizations, and, at least initially, the FRC-B Acquisition Project, including the PRO. Each FRC-B crew, while in port, will perform preventive and minor corrective maintenance as operational conditions permit. In addition, maintenance will be performed by FRC-B cutter crews, other support organizations, and commercial sources during scheduled maintenance periods.
- 081-2.3 [RFP] Bi-Level Maintenance. The objective of maintenance is the preservation of inherent design levels of reliability, performance, and safety at the minimum practical costs. All Coast Guard systems require some form of planned, corrective, and facility maintenance. To maintain Coast Guard equipment in the highest state of readiness, consistent with program goals, and to ensure maximum effective use of resources, a bi-level system of maintenance support has been devised: Organizational and Depot. The complexity and magnitude of the requirements for the maintenance event determines at what level within the bi-level system the event is performed. The overall operation and sustainment support philosophy for the FRC-B System is for Coast Guard organic logistics support assets to provide total or near total organizational-level maintenance support.

081-3 [RFP] Terms and Definitions

- 081-3.1 [RFP] The following three types of maintenance will be performed on the FRC-B and its equipment:
- 081-3.1.1 [RFP] Planned Maintenance is that which is routinely scheduled for the purpose of preventing equipment and system failures by providing systematic inspection, testing, monitoring, lubrication or replacement of components.
 - 081-3.1.2 [RFP] Corrective Maintenance is that which repairs failures to equipment, systems, hull, structure, etc. Casualties requiring corrective maintenance are random in both time and severity.
 - 081-3.1.3 [RFP] Facility Maintenance is that which preserves the hull and superstructure, their structure, fittings, protective and decorative coverings. Such maintenance includes basic housekeeping.
- 081-3.2 [RFP] FRC-B maintenance will be performed at one of the following levels:
- 081-3.2.1 [RFP] Organizational Level Maintenance. The minimum maintenance for accomplishment by operational unit organizational personnel. Minimum maintenance is defined as the least amount of care and the longest time between accomplishment which will ensure an acceptable degree of reliability and availability. Maintenance which is the responsibility of the organizational unit is either performed by the onboard crew, performed directly under the unit's auspices, such as cutter-funded contracted industrial or commercial support, or, for electronic equipment, performed by the assigned Electronic Support Detachment (ESD). Cutters are responsible for completing all organizational-level planned and corrective maintenance. Typical maintenance items falling under this category involve:
 - 081-3.2.1.1 [RFP] All planned maintenance except that requiring tools or other resources not held on board the organizational unit, or that requiring technical skills of personnel beyond those available in the operational unit's crew.
 - 081-3.2.1.2 [RFP] All facility maintenance except that requiring resources or skills beyond that normally available to the unit.
 - 081-3.2.1.3 [RFP] All corrective maintenance except that requiring tools, parts, or other resources not held on board the operational unit or that requiring technical skills of personnel beyond those available in the operational unit's crew.
 - 081-3.2.2 [RFP] Depot Level Maintenance. Maintenance performed on equipment or material requiring major overhaul or a complete rebuild of parts, assemblies, subassemblies, and end items, including the manufacture of parts, modifications, testing, and reclamation. Typically, maintenance items in this category can be performed only during a dry-docking or dock-side availability, or they involve the removal of the affected equipment from the cutter for repair in an industrial or commercial facility ashore. For cutters, depot-level maintenance represents the vast majority of conventional maintenance, repair, and alterations beyond the organizational level capability. Typical maintenance items falling under this category involves:
 - 081-3.2.2.1 [RFP] All planned maintenance requiring major hull repairs, application or removal of major flooring or coating systems, and periodic major system or equipment overhauls or maintenance which may require the removal of

the affected equipment from the cutter for repair in an industrial facility ashore.

081-3.2.2.2 [RFP] Facility maintenance requiring resources or skills beyond that normally available to the unit and not assigned at the organizational-level.

081-3.2.2.3 [RFP] Corrective maintenance requiring overhaul or replacement of major cutter components (main engines, marine gears, etc.) requiring resources or skills beyond that normally available to the unit and not assigned at the organizational-level.

081-4 [RFP] Reliability Centered Maintenance (RCM)

081-4.1 [RFP] Maintenance requirements shall be developed using RCM methodology in accordance with [MIL-P-24534A Notice 1](#) dated 21 March 1995 and document all information, decisions and provide data deliverables in accordance with [CDRL 081-001](#). Personnel developing these requirements shall hold a current NAVSEA RCM Level II Certification.

081-4.1.1 [RFP] Operational and maintenance functions required for the FRC-B shall be identified for each item to be incorporated at the level of detail of the Configuration Item Line Replaceable Unit (CILRU), defined and developed in accordance with [CDRL 085-009](#).

081-4.2 [RFP] An analysis shall be conducted which documents both planned and corrective maintenance requirements for organizational- and depot-levels as defined by [CDRL 081-001](#).

081-4.3 [RFP] Planned Maintenance System (PMS). For each organizational-level maintenance requirement identified, the Contractor shall develop maintenance task procedure deliverables 4-6, phases 8-12 as defined by [CDRL 081-001](#).

081-4.3.1 [RFP] Maintenance Procedure Cards (MPC) shall be developed and provided based on organizational-level MIP/MRC RCM recommendations and task analysis results in accordance with [MIL-P-24534A, Notice 1 \(CDRL 081-001\)](#).

081-4.3.2 [RFP] The information contained within the MPC shall be validated through performance of operations and maintenance tasks on installed FRC-B Systems/equipment. Validation requirements shall be coordinated with other system engineering tests and demonstrations, as applicable.

081-4.4 [RFP] The FRC-B Supportability Analysis (SA) Review process is divided into three distinct Review Points (RP's) as defined by [CDRL 081-001](#). They are:

081-4.4.1 [A014] RP-1 – Review of Failure Modes and Effects Analysis (FMEA)(see [CDRL 081-001](#)), prior to advancing to Phase 5.

081-4.4.2 [RFP] RP-2 – Review of MRI, prior to advancing to Phase 9.

081-4.4.3 [RFP] RP-3 – Review and acceptance of MPCs and SA-based sparing recommendations.

SECTION 083. [RFP] SUPPLY SUPPORT**083-1 [RFP] Background**

083-1.1 [RFP] The Coast Guard conducts supply support for its cutters using three major sources of support. The most immediate source of support consists of the on board repair parts delivered with the cutter under the Supply Support CLINs in Contract Section B. The next source of support consists of parts obtained from the commercial sector. The final source of support consists of an inventory of Coast Guard-unique parts stocked at the Coast Guard Engineering Logistics Support Center (ELC). Prior to the establishment of a final approved Product Configuration Baseline, the Coast Guard will not be investing in a robust inventory for the ELC and will minimize the investment at the unit support level. To ensure adequate supply support for the operational employment of the FRC-B until Coast Guard Support Date is achieved, and later as necessary, the Government intends to purchase initial and replacement spare parts and repair parts from the contractor using the Interim Contractor Supply Support.

083-2 [RFP] General

- 083-2.1 [RFP] The Contractor shall perform the work necessary to provide data and materials to the Coast Guard for supply support development. This includes, but is not limited to, special repair parts, provisioning, provisioning monitoring, and the material requirements of this COR Section.
- 083-2.2 [RFP] Provisioning Guidance Conference. No later than 90 days after contract award, the Coast Guard will convene a Provisioning Guidance Conference to review and discuss the provisioning requirements. Facilities to accommodate up to 30 people for at least one week per review shall be made available at the Contractor's site. The conference will address Government and Contractor efforts in supply support development.
- 083-2.3 [RFP] Provisioning Conferences/In-Process Reviews (IPRs). The Contractor shall participate in Provisioning Conferences/IPRs. The conferences/IPRs shall be convened quarterly to determine the status of supply support milestones, review provisioning data, and discuss and resolve related problems and/or issues. Conference facilities shall be provided to accommodate up to 30 people for at least one week per review. Overall logistics project accomplishments shall be evaluated at the IPRs.
- 083-2.3.1 [RFP] The Contractor shall make the logistics data available for conferences/IPRs. Complete technical data and the specific equipment being provisioned shall be available for inspection at the provisioning conferences. The Contractor shall provide the latest issue of drawings relevant to the data being reviewed at the conference/IPR.
- 083-2.3.2 [RFP] The Contractor shall prepare the agenda and minutes for the conferences, IPRs, and other supply support meetings that are convened by the Coast Guard in accordance with CDRL'S [042-002](#) and [042-003](#).

083-3 [RFP] Definitions, Abbreviations and Acronyms

083-3.1 [RFP] Activity Control Number (ACN). A number assigned by the Government to identify items of supply not currently assigned a National Stock Number (NSN).

- 083-3.2 [RFP] Allowance Equipage List (AEL). A list developed for specific categories of allowance items of a durable nature, not installed, that must be on board a cutter to perform its mission. Equipage is defined as specific categories of allowance items of a durable nature, which must be on board the cutter to perform its mission. This includes non-installed equipment, tools, special and common support, and test equipment.
- 083-3.2.1 [A010] System Stock. System Stock is demand inventory and new support items entering the Federal Stock System for the first time that is required to support initial deployment of a system or piece of equipment. These spares are equipment such as Long Lead Time items and inventory demand items required to satisfy support requirements.
- 083-3.3 [RFP] Commercial and Government Entity (CAGE) Code. A five digit numerical code assigned to manufacturers.
- 083-3.4 [RFP] Master Equipment Configuration List (MECL). A technical and supply document prepared for an individual cutter which lists the Hull, Mechanical, Electrical, Electronic, and Ordnance (HM&E, C4ISR, and Ordnance) equipment and components installed, associated on board repair parts, special tools, test equipment, miscellaneous portable items, and equipage required to perform its mission.
- 083-3.5 [RFP] Contractor Furnished Systems and Equipments (CFE). CFE is defined as systems or equipment fabricated or procured by a shipbuilder for installation in a craft being built or converted.
- 083-3.6 [RFP] Defense Logistics Services Center (DLSC). The Department of Defense (DOD) activity responsible for the maintenance of all cataloging data for items registered in the DOD supply system. (Note - DLSC assigns all NSNs.)
- 083-3.7 [RFP] Engineering Data for Provisioning (EDFP). (Formerly Supplemental Provisioning Technical Documentation (SPTD)). Technical data (graphic segment of PTD) used to describe each part/equipment and consists of data such as specifications, standards, drawings (general arrangement, assembly, detail, schematic, schematic diagrams, one line diagrams, wiring and cabling diagrams, etc.), photographs, sketches, written descriptions required to physically and electrically identify an item, indicate the location and function of the item. As a minimum, EDFP must provide for: technical identification for maintenance and repair support considerations; review for potential interchangeability and substitutability; preparation of allowance/issue lists; physical dimensions, material, mechanical, electrical and other unique descriptive characteristics for the purpose of assigning type 1 National Stock Numbers (NSNs); standardization; item entry control; management coding and procurements.
- 083-3.8 [RFP] General Use Consumable List (GUCL). A list of recommended non-equipment related consumables necessary to support a ship's routine and administrative operations.
- 083-3.9 [RFP] Insurance Spares. Spares, repair parts, or units procured for items that normally have a low demand rate, but would be difficult to replace because of procurement lead time or manufacturing complexity. Insurance spares are bought for those items whose loss renders the cutter inoperable for a long period of time because the low demand rate does not generate a procurement for system stock. These items support mission critical equipment/systems and an

unexpected failure would cause severe degradation or completely abort the primary mission.

- 083-3.10 [RFP] Installation and Check-Out Spares (INCOS). Spares used to verify installation is complete, correct and test equipment prior to operational use.
- 083-3.11 [RFP] Operating Material and Spares (OM&S). Spare and repair parts carried onboard for maintenance and repair of equipments and components. This includes spares carried in Cutter specific shore side storage.
- 083-3.12 [RFP] Operating Space Item (OSI). Support items required to perform routine tasks and stored near or in operating spaces. OSI may consist of equipment, loose hardware, consumables, accessories, tools, and support and test equipment. In certain cases, Storeroom Items (SRI) may become OSI due to the size or weight of the item. These are referred to as "bulkhead mounted spares".
- 083-3.13 [RFP] Outfitting. The process of placing onboard all the material specified by the authorized allowance documents. It includes ordering, funding, expediting, follow-up, receipt, inspection, and stowage of material.
- 083-3.14 [RFP] Prebinning. The operation of placing authorized allowance material in designated stowage devices/replicas (mock-up), representing shipboard storeroom configurations, in the Contractor's warehouses.
- 083-3.15 [RFP] Provisioning. The process of determining and acquiring the range and depth of spares and repair parts, and support and test equipment required to operate and maintain an end item for an initial period of time. During this time, demand data is collected for refinement of system stock levels.
- 083-3.16 [RFP] Provisioning Parts List (PPL). The PPL contains all component equipment and support items which can be disassembled and reassembled, but does not contain standard hardware items such as common nuts, bolts, screws, washers and electrical wire and cable, except when they are of a specific design.
- 083-3.17 [RFP] Storeroom Items (SRI). SRI includes allowed repair parts, subassemblies, and units in support of equipment, backup quantities of consumable supplies not related to specific equipment, and backup quantities of forms. However, for purposes of [MIL-STD-1339C](#), storeroom items are limited to repair parts, subassemblies, and units in support of hull, mechanical, electrical, ordnance, electronic material, and any other items which may be specifically designated by the Coast Guard.
- 083-3.18 [RFP] Support Items. Items subordinate to, or associated with, an end item (i.e., spares, repair parts, tools, test equipment, and sundry materials) and required to operate, service, or overhaul an end item. As further clarification, "support item" means piece parts that make up the component.
- 083-3.19 [RFP] Certificate of Identicality. Certificate signed by the contractor attesting that materials and or equipment used on follow on FRCs are identical in every respect to the item previously provisioned and approved on an earlier FRC-B. ([CDRL 083-001](#))
- 083-3.20 [RFP] Other Definitions. Other supply support definitions are provided in [COMDTINST M4105.8](#) and [MIL-STD-1339C](#).

083-4 [RFP] Provisioning

- 083-4.1 [RFP] In keeping with Coast Guard practices the Contractor shall plan and implement FRC-B provisioning, including responsibilities, schedules, and

interfaces with existing systems and practices. The Contractor shall implement the provisioning efforts for all repairable and replaceable equipment installed onboard the FRC-B to support Organizational, and Depot Level maintenance requirements in accordance with the RM&A and RCM analyses developed for the FRC-B.

- 083-4.2 [RFP] Provisioning Parts Lists (PPL's) shall be provided via the Interactive Computer Aided Provisioning System (ICAPS) Government version 5.1, reports, as defined in Integrated Support Plan, [CDRL 080-001](#). A Provisioning Document Control Number (PDCN) shall be assigned to all provisionable equipment and component submissions.
- 083-4.3 [RFP] The following data elements shall be utilized within the PPL preparation ensuring the coding represents the FRC-B Maintenance Philosophy:
- 083-4.3.1 [A003] Mission Criticality Code (MCC) – The Coast Guard Mission Criticality Code is a subjective indication of the "importance" of the equipment or component to the missions and operations of the unit. It indicates the level of mission and operations degradation the unit might experience in the event the equipment or component should fail.

Code	Definition
4	Severe degradation of mobility, total loss of primary mission, or loss of this equipment results in a safety hazard to the ship or its crew.
3	Severe degradation of a primary mission.
2	Total loss of secondary mission, partial loss of primary mission.
1	Partial loss of secondary mission.

- 083-4.3.2 [RFP] Source, Maintenance and Recoverability Code (SM&R) – This five character code indicates the level of Supply Support for the item, as well as what organizational level (Unit, Maintenance Assist Team, Naval Engineering Support Unit, District, Maintenance Logistics Command, etc.) is authorized to maintain and repair the item, and what level is authorized to dispose of the item. SM&R Codes shall be developed and documented as part of the Level of Repair Analysis, [CDRL 076-002](#).
- 083-4.4 [RFP] Provisioning Program. The contractor shall conduct the provisioning program in accordance with the ISP ([CDRL 080-001](#)) and ensure that provisioning data accurately reflects the configuration of the FRC-B and its supporting components. The contractor shall ensure the provisioning data is adequate to support:
- 083-4.4.1 [RFP] Production efforts.
- 083-4.4.2 [A002] Interactive Electronic Technical Manuals (IETMs), maintenance data, maintenance procedures, and other data delivered via the requirements of COR Section SECTION 080 and the ISP.
- 083-4.4.3 [RFP] Supply Support requirements of this COR Section.
- 083-4.5 [RFP] Provisioning Data Requirements.
- 083-4.5.1 [RFP] Provisioning data shall be developed and provided for:

- 083-4.5.1.1 [RFP] Any equipment or component on the Master Equipment Configuration List (MECL) obtained from any source of supply.
- 083-4.5.1.2 [RFP] Any equipment or component on the Master Equipment Configuration List (MECL) that the contractor manufactures or modifies.
- 083-4.5.1.3 [RFP] Any unique or Special Purpose Test Equipment.
- 083-4.5.2 [RFP] The Contractor shall ensure provisioning data includes information to identify the end item as well as related components, subcomponents, or assemblies, and related support items.
- 083-4.5.2.1 [RFP] For end items with embedded software or firmware, such as the engine control management systems, propulsion control systems, and systems employing Programmable Logic Controllers (PLCs), ensure the provisioning data information includes the version or other identifying information of the embedded software or firmware, and that the software or firmware, and the associated rights necessary for the Coast Guard to operate, maintain, diagnose, and repair the FRC-B System throughout its lifecycle, are delivered in accordance with COR SECTION 086.
- 083-4.5.2.2 [RFP] For end items requiring related support items consisting of software used to update or maintain embedded software or firmware, such as diagnostics and/or programming software for engine control management systems, propulsion control systems, and the radios, ensure the provisioning data information includes the version or other identifying information of the support software, and that the software, and the associated rights necessary for the Coast Guard to operate, maintain, diagnose, and repair the FRC-B System throughout its lifecycle, are delivered in accordance with COR SECTION 086.
- 083-4.5.3 [RFP] The contractor shall perform provisioning screening on all systems, equipment, components, and repair parts provisioned, for the purpose of identifying National Stock Numbers (NSN). For any provisioned item with an assigned NSN, the contractor shall include the NSN in the provisioning data.
- 083-4.5.4 [RFP] The name of Original Equipment Manufacturer and equipment / item identification number shall be provided where applicable.
- 083-4.6 [RFP] Reporting Provisioning Data.
- 083-4.6.1 [RFP] Provisioning Parts List (PPL). PPL data shall be developed to determine the range and quantity of support items required to maintain an end item for an initial period of service. This includes all repairable commercial-off-the-shelf (COTS) items unless specifically excluded. It does not include a breakdown of government furnished equipment. The PPL shall be provided in accordance with [CDRL 083-002](#).
- 083-4.6.2 [RFP] Engineering Data For Provisioning (EDFP). EDFP shall be provided for each item appearing on the Provisioning Parts List (PPL), first appearance only, and in accordance with [CDRL 083-003](#).
- 083-4.7 [RFP] Readiness-Based Sparing Recommendations. Recommendations for Coast Guard storeroom allowances shall be provided in accordance with [CDRL 083-004](#).
- 083-4.8 [RFP] Spares. As appropriate, the Government will direct the contractor to provide provisioned parts and equipment. Unless otherwise specified in the

contract, the contractor shall handle, package, mark and deliver parts in accordance with packaging instructions in COR SECTION 084 and contract [Section D](#). Provide status reporting of these spares, in accordance with the instructions contained in each delivery order.

- 083-4.9 [RFP] The Contractor shall provide a Provisioning Technical Documentation Submission Schedule (PTDSS) in accordance with [CDRL 083-005](#). The PTDSS shall include the estimated PTD submissions expected for delivery to the USCG.

083-5 [RFP] Outfitting Material Procurement

- 083-5.1 [RFP] Government Furnished Equipment/Material (GFE).

083-5.1.1 [RFP] The Government will furnish all material identified in Section "J" Attachments entitled "[Government Furnished Equipment](#)" and "[Government Furnished Information](#)".

083-5.1.2 [RFP] The Government will provide and load small arms, ammunition, navigational logs, charts, administrative directives, forms, publications, and subsistence items after cutter delivery.

- 083-5.2 [RFP] Contractor Furnished Equipment/Material (CFE).

083-5.2.1 [A010] The recommended Operating Material and Spares (OM&S), system stock, special tools and test equipment, and insurance spares shall be annotated in a logistics database based on vendor recommendations and the results of the Supportability Analysis (SA). The logistics database is required to comply with [MIL-PRF-49506](#) be able to populate the ICAPS database. A no cost supportability analysis database product (powerLOG-J) is available through the US Army Material Command Logistics Support Activity (LOGSA), however its use is not mandatory. A set of OM&S shall be provided for all CFE for each FRC-B, support and test equipment (S&TE) and initial system stock for Coast Guard unique items through a cost plus fixed fee procurement in accordance with Section B. The general parts ordering process is described below:

083-5.2.1.1 [RFP] OM&S shall be recommended for necessary maintenance of the component/equipment for a 90 day period.

083-5.2.1.2 [RFP] The Government will review and select OM&S, S&TE, and Coast Guard unique system stock. The Government will assign a National Stock Number (NSN) or Activity Control Number (ACN) for each OM&S, S&TE and system stock item. The Government will then return incremental parts/equipment listings to the Contractor as authority to initiate procurement.

083-5.2.1.3 [RFP] Within sixty (60) days after receipt of the parts/equipment listing, the procurement of support items shall be executed. Upon receipt of the system stock items, they shall be forwarded to the appropriate Coast Guard Supply Center. Deviation from the 60 day requirement may be authorized for procurement of those items that would be affected by shelf life dates, tie-in with vendor production, batch procurement for cost leverage, and items requiring additional time for fact finding, audit and compliance with federal regulations.

083-5.2.1.4 [RFP] When a design change affects any item ordered, immediate action shall be taken to effect the revisions and incorporate the results on Design Change Notices (DCNs) for approval. When a design change

reduces or eliminates requirements, such requirements shall delete or reduce that originally ordered in the ratio authorized by the approved ordering method. When an item previously ordered is replaced by another item(s), the new item(s) shall be fabricated or procured in the same ratio as the number of end items affected by the change within the previously authorized funding limitations. When the adjustments require an increase in the total quantity recommended or any additional item(s), the increases shall be recommended.

083-5.2.2 [RFP] OSI/SRI and GUCL listings shall be developed for government or contractor furnished equipment. The OSI/SRI and GUCL listings shall be based on initial information provided by the Government. The listings shall be provided to the Government for review and approval. The Government may provide the contractor access to the Federal Supply System to procure these items. The OSI/SRI and GUCL listings shall be submitted using the same format as initially provided by the Government.

083-5.2.3 [RFP] Material procurement shall be scheduled to arrive in the shipyard in time to assure binning and loading of the cutter prior to inclining.

083-5.2.4 [RFP] AELs shall be provided in accordance with [CDRL 083-006](#).

083-6 [RFP] Outfitting

083-6.1 [RFP] General. Receipt, identification, pre-binning, binning, loading, and stowage of all Government and Contractor furnished SRI and OSI; Contractor furnished Installation and Check-Out Spares (INCOS); and any other material as specified by the Coast Guard shall be accomplished in accordance with this COR and [MIL-STD-1339C](#).

083-6.1.1 [RFP] Receipt, Inspection, Identification, and Box Loading. The Contractor shall perform the receiving, inspection, identification, handling, and stowage functions for material authorized allowance items. All receipts shall be checked against packing lists and his purchase orders to verify correctness and completeness. Expeditious action shall be taken to obtain missing material and replace damaged or unusable material. Replacements shall be reported to the Government.

083-6.2 [RFP] Outfitting Operations Plan, Part II and III. An Outfitting Operations Plan ([CDRL 083-007](#)) shall be developed for all onboard material which shall be loaded in accordance with [MIL-STD-1339C](#).

083-6.3 [RFP] Inventory/Staging System.

083-6.3.1 [A009] OSI, SRI, OM&S, ST&E, and GUCL items shall be delivered with the FRC-B.

083-6.3.2 [RFP] Outfitting Material Status Reports ([CDRL 083-008](#)) shall be provided to the Coast Guard to monitor and track all onboard allowance material in accordance with [MIL-STD-1339C](#).

083-6.4 [RFP] Loading/Binning/Stowage.

083-6.4.1 [RFP] All Contractor and Government furnished SRI, OSI, and GUCL items shall be loaded and properly stowed as directed by the Coast Guard. A custody acceptance signature shall be obtained from the designated Coast Guard representative upon loading out of each shipboard compartment and shore side storage cabinet.

- 083-6.4.2 [A010] Mock-ups of the ship's SRI storerooms shall be constructed in accordance with [MIL-STD-1339C](#) and assign permanently identifying numbers to the drawer, bin, and rack locations. Multiple stowage locations for identical material are not authorized. In addition to the standard human-readable location number labels, each location shall be marked with the same location number using a bar code label prepared in accordance with [MIL-STD-1189B](#) and [USCG 2D Bar Code Standard Data Elements](#). Location bar code labels shall be "high density" and shall be of the "general use" type for the purpose of determining label height. Direct thermal printing (thermal transfer) labels shall be used, and shall be affixed to the right of the human-readable labels, whenever practicable.
- 083-6.4.3 [RFP] Pre-binning shall be accomplished in accordance with [MIL-STD-1339C](#). No drawer, bin, rack, or cabinet shall be filled to over 80% of capacity unless approved. Whatever the stowage method used, parts shall be secured against coming adrift. During pre-binning, the following criteria shall be applied:
- 083-6.4.3.1 [RFP] Small Item Stowage - Small items, such as, resistors, capacitors, and transistors which are packaged in envelopes shall be stowed standing on end in small version modular, high density storage equipment cabinets and compressed between drawer dividers.
- 083-6.4.3.2 [RFP] Stowage Device Selection - Stowage device selection (drawer, bin, rack, or bulk stowage) shall be based on a balance between stowage space utilization and item accessibility. In selecting the appropriate type of stowage aid, the stowage space requirements for the depth of stock of a line item (piece count for a line item) shall be considered in addition to the size of the individually packaged line item.
- 083-6.4.3.3 [RFP] Drawer Size Selection and Compartmentation - The size and number of drawers, drawer partition, and dividers required for small version modular drawer storage cabinets in storerooms shall be determined during the pre-binning process. Drawer sizes shall be selected which offer the best stowage cube utilization for items to be stowed. Drawer partitions and compartments shall be used for large items and those items having a large depth of stock. Smaller items, having a low depth of stock, may be commingled in a single drawer compartment provided no more than ten line items are located within a single compartment.
- 083-6.4.3.4 [RFP] The number of shelves for adjustable height shelving units for shelf cabinets located in storerooms shall be determined during the pre-binning process. The criterion used for selecting the number of shelves required is to achieve a balance between stowage cube utilization and material accessibility in each stowage location. Compartmentation shall be achieved by positioning shelving to restrict the number of line items per stowage location, and to maintain a reasonable degree of item accessibility and retrievability while maintaining good stowage cube utilization.
- 083-6.4.4 [RFP] A Binned Material List shall be prepared and provided to enable the Coast Guard to verify inventory accuracy of all binned SRI in accordance with [MIL-STD-1339C](#) and [CDRL 083-008](#).

- 083-6.4.5 [RFP] A Shipboard Stowage Locations List of all required onboard allowance material with the applicable designated stowage location shall be provided in accordance with [MIL-STD-1339C](#) and [CDRL 083-008](#).
- 083-6.4.6 [RFP] All allowance material received by the Contractor after cutter delivery and prior to departure from the Contractor's facility shall be turned over to the cutter. Contractor furnished onboard allowance material received after cutter departure shall be packaged and shipped, at Contractor's expense, in accordance with instructions provided by the Coast Guard.
- 083-6.5 [RFP] Shortage Reporting. 100% of required material shall be provided. When shortages exist, the Contractor shall follow-up and report the status to the Government on such shortages until all items required by the contract have been delivered. The Contractor shall prepare and submit concurrently with acceptance trials an Official Shortage List for review. A Departure Shortage List, at time of the FRC-B departure shall include shortages and all delivery status information available ([CDRL-083-009](#)). The due-in document number/ purchase order number will be provided for each shortage item listed until the material is received.
- 083-6.6 [RFP] Excess Material. An Excess Ship Outfitting Material Report ([CDRL-083-010](#)) shall be provided in accordance with [MIL-STD-1339C](#). After review, the Government will provide disposition instructions.

083-7 [RFP] Modular, High Density Equipment Storage Cabinets

- 083-7.1 [A010] Modular, high density equipment storage cabinets (see COR Section [672](#)) shall be provided for shoreside OM&S specified in the contract. Modular, high density storage equipment cabinets shall be procured for storing shoreside repair parts, along with additional cabinets for future growth in government outfit items. Future growth is the additional outfit items that are identified and determined through the provisioning process. A margin of 10% for future growth should be included in calculations for shoreside storage. Once the Contractor has completed the provisioning process, the actual number of required cabinets can be determined. Labels shall be placed on these cabinets to identify the cabinets on the craft where the same items are stowed. The cabinets shall be constructed so that they can be easily installed and removed without disassembly and without having to be unloaded, and so that their contents will be securely contained during transit. The cabinets shall be loaded/binning according to the requirements of this COR Section.

083-8 [RFP] Preservation, Packing and Marking

- 083-8.1 [RFP] Storeroom Items. Packaging shall be such as to prevent damage caused by movement or weight of parts in a box. A Packing List itemizing all parts in the box shall be mounted inside the lid of each box.
- 083-8.1.1 [A010] Contractor furnished OM&S and unique system stock equipment and repair parts shall be preserved, packaged, packed, and marked in accordance with [ASTM D3951](#), except that sensitive electronic items shall be preserved in accordance with [MIL-E-17555](#), Section 3.11.10. Solid-state components, such as diodes, transistors, integrated circuits, and equipment containing parts that can be damaged as a result of static electricity or electromagnetic force shall be packaged in a manner that prevents such damage in accordance with [MIL-E-17555](#), sections 3.6 and 3.11.10. Marking

- shall be in accordance with [MIL-STD-1189B](#) and [USCG 2D Bar Code Standard Data Elements](#).
- 083-8.1.2 [A010] GFE delivered shall be inspected for prebinning and storage. Government furnished OM&S delivered to the Contractor shall be inspected and repackaged, if necessary, to meet the requirements of [MIL-E-17555](#). Marking shall be in accordance with [MIL-STD-129P](#) and bar coded in accordance with [MIL-STD-1189B](#) and [USCG 2D Bar Code Standard Data Elements](#).
- 083-8.1.3 [RFP] OM&S packaging that will be removed from containers and placed in racks or shelf type stowage shall be designed to protect items against physical and environmental damage during storage. Packaging for parts not stored in storerooms shall be designed for protection against the most severe conditions anticipated to be encountered during storage.
- 083-8.1.4 [A010] Standard bar codes shall be included for the assigned NSN or ACN on the outer cover of the packaged material, as required by [MIL-STD-129P](#), [MIL-STD-1189B](#), and [USCG 2D Bar Code Standard Data Elements](#), in addition to any markings required herein.
- 083-8.1.5 [RFP] Insurance spares are held for long periods of time. Long term storage items shall be packaged, marked and preserved as required by [ELC Preservation, Packaging and Marking SP-PPM-01](#).

SECTION 084. [RFP] PACKAGING, HANDLING, STORAGE, AND TRANSPORTATION**084-1 [RFP] Delivery of the FRC-B**

- 084-1.1 [RFP] For each FRC-B, the contractor shall develop and submit a Delivery Plan in accordance with [CDRL 084-001](#).
- 084-1.2 [RFP] The FRC-B shall be delivered to an established delivery location designated by the Contracting Officer. The delivery location shall be a Coast Guard facility that is suitable for the inspection and Acceptance Trials (AT) of the FRC-B, and support the logistics requirements of these events. The contractor is responsible for all arrangements to support the delivery and acceptance of the FRC-B except for Coast Guard representatives' travel and lodging.

084-2 [RFP] Preparing the FRC-B for transport to the delivery location

- 084-2.1 [RFP] The FRC-B shall be prepared for delivery in a manner that provides protection against damage and assures safe arrival of the cutter and outfit to its delivery location.
- 084-2.2 [RFP] Removed items, cables and mounts, except hardware, shall be match-marked to facilitate reassembly. Removed items shall be tagged, marked, and the tags attached to each mating item. The tags and printing therein shall be resistant to oil, water, and fading. Permanent alignment marks shall be required on components that need to be removed to transport.
- 084-2.3 [RFP] Items, accessories, spare and repair parts, and tools removed from their operating locations and manuals packed as specified herein shall be stowed in their designated stowage location. Material stowed above and below decks shall be secured, preventing material movement, dislodgement, and damage to the material, stowage facility, and FRC-B during its handling and transport.

SECTION 085. [RFP] DRAWINGS**085-1 [RFP] General Requirements**

- 085-1.1 [RFP] This section contains requirements for drawings and associated lists. Drawings shall describe the design and construction of the FRC-B and its systems. The drawings shall provide sufficient information to enable a contractor to construct an identical cutter or any part of the cutter without further design effort, calculations, or access to the cutter.
- 085-1.2 [RFP] Engineering drawings shall completely specify unique processes, when essential to production, and when applicable: performance ratings; dimensions and tolerance data; critical assembly sequences; equipment characteristics; diagrams; mechanical and electrical connections; physical characteristics, including form, finish, and weight; details of material identification; inspection, test, and evaluation criteria; necessary calibration information; and other quality control data. The Contractor shall note required certifications on the related drawings. The drawings shall be self sufficient and fully describe construction of the FRC-B without reference to other documents. Drawings shall show essential fabrication details, including the welding procedure (or the welding procedure number if the procedure has previously been submitted and approved) and welding sequences.
- 085-1.3 [RFP] Review of drawings by the Coast Guard shall not relieve the Contractor of his obligation to meet the requirements of this COR. Drawings required to be furnished by the Contractor shall become the sole property of the Coast Guard. Release statements shall be obtained for any drawings that may be proprietary in nature and reference shall be made to these release statements on drawings provided as final drawings to the Coast Guard.
- 085-1.4 [RFP] For all drawings required by this section, material purchased in English standard units shall be called out on the drawings in English standard units, material purchased in SI (metric) units shall be called out on the drawings in SI (metric) units. Applicable materials shall include shapes, plates, and pipes.
- 085-1.5 [RFP] In addition to other drawing submissions required under this contract, the contractor shall provide all drawings referenced within any drawing that have not been previously delivered under this contract.
- 085-1.6 [RFP] Any changes or revisions to an approved drawing shall be submitted for approval.

085-2 [RFP] Definitions

- 085-2.1 [RFP] Ship Construction Drawing. These are Contractor prepared drawings that are necessary for construction of the FRC-B meeting the requirements of this COR.
- 085-2.2 [RFP] Final Drawing. Final Drawings shall be the Ship Construction Drawings with revision required to reflect the "as-built" configuration of the FRC-B after completion of the Preliminary Acceptance Trials.
- 085-2.3 [RFP] Selected Record Drawings. A set of class-wide configuration control drawings, in addition to the construction drawings and final "as built" drawings.

- 085-2.4 [RFP] 3-Dimensional Technical Data Package (3D TDP). The 3D TDP shall comprise one or more linked 3-dimensional CAD files (3D models) and associated electronic lists.
- 085-2.5 [RFP] 2-Dimensional (2D) Product Drawings and Associated Lists. 2D product drawings shall be comprised of printable depictions of all system and structural components in their actual size and location.
- 085-2.6 [RFP] Diagrams. Diagrams shall depict functional interconnections between components of a given system.

085-3 [RFP] Drawing Submission

- 085-3.1 [RFP] Ship Construction and Final Drawings shall be prepared and delivered to the Contracting Officer.
- 085-3.2 [RFP] All drawings are to be reviewed and approved by the Contractor prior to transmittal to the Contracting Officer except if early review is requested. If early review is requested, this does not preclude subsequent Contractor review and approval.
- 085-3.3 [RFP] Ship Construction Drawings received by the Contracting Officer shall have revision "1" listed as "FIRST SUBMITTAL". If the drawing is required to be re-submitted, it shall have the next revision number shown and in the revision block the revisions made corresponding to the comments received from the Contracting Officer.
- 085-3.4 [RFP] All references to numbered revisions shall be removed before the submission of final drawings to the Contracting Officer. The final drawings shall have a "-" in the revision area in the drawing number blocks throughout the drawings.

085-4 [RFP] General Drawing Requirements

- 085-4.1 [RFP] Drawings shall be developed and formatted in accordance with [COMDTINST M9085.1B](#), "Computer Aided Drafting Standards", Chapters 3 and 4A. Standard USCG drawing templates shall be used. Templates will be provided as GFI in electronic format to the contractor after contract award. Refer to www.uscg.mil/hq/elcbalt/drawings.htm.
- 085-4.2 [RFP] In addition to the standard features of the borders, the following shall be included in accordance with COMDTINST M9085.1B:
 - 085-4.2.1 [RFP] An area labeled for general notes.
 - 085-4.2.2 [RFP] A block for reference drawings (on sheet 1 only).
 - 085-4.2.3 [RFP] A signature block (on sheet 1 only).
 - 085-4.2.4 [RFP] Drawings shall make reference to and be consistent with all other related drawings.
 - 085-4.2.5 [RFP] Unless otherwise specified, Parts List or Bill of Materials shall be integral with the drawing.
- 085-4.3 [RFP] Drawing numbers and Title Block Numbering Convention will be assigned by the USCG Engineering Logistics Center (ELC) code 05T and will be in the following format, <length><sub-class><vessel class>-<Dwg. SWBS>-<Ser. No.> (e.g. 110-WPB-100-001).

- 085-4.4 [RFP] USCG signature authority for drawings will be the Coast Guard Project Resident Office PRO.
- 085-4.5 [A013] Drawings shall be organized in accordance with Coast Guard [ESWBS/HSC](#).
- 085-4.6 [RFP] A drawing number assignment report shall be submitted ([CDRL 085-001](#)).

085-5 [RFP] Required Ship Construction Drawings

- 085-5.1 [RFP] Ship Construction Drawings shall be developed to demonstrate that the FRC-B conforms to the requirements of this COR. Ship Construction Drawings shall include Diagrams and Arrangement Drawings.
- 085-5.2 [RFP] Arrangement Drawings shall show plan views, elevations, and sectional views to fully describe the design and construction of the FRC-B. The Parts List or Bill of Material shall include at a minimum: item number, description, quantity and units, material, and manufacturer. If the equipment is Government furnished, the manufacturer column shall indicate "GFE".
- 085-5.3 [RFP] Required ship construction drawings shall include at a minimum but not be limited to the following:
- 085-5.3.1 [RFP] General Arrangement Drawings, including deck plans and inboard and outboard profiles ([CDRL 085-002](#)).
 - 085-5.3.2 [RFP] Hydrostatic Table, Hull Curves of Form, Cross Curves of Stability ([CDRL 085-003](#)).
 - 085-5.3.3 [RFP] Docking plan (including weight distribution) ([CDRL 085-004](#)).
 - 085-5.3.4 [RFP] Lines and offsets ([CDRL 085-020](#)).
 - 085-5.3.4.1 [RFP] Rudder and Appendages.
 - 085-5.3.5 [RFP] Welding and fabrication procedures and sequences ([CDRL 085-021](#)).
 - 085-5.3.6 [RFP] Drawings of Jigs and Fixtures as required ([CDRL 085-022](#)).
 - 085-5.3.7 [RFP] Structural Drawings ([CDRL 085-100](#)).
 - 085-5.3.7.1 [RFP] Midship Section.
 - 085-5.3.7.2 [RFP] Shell Expansion.
 - 085-5.3.7.3 [RFP] Transverse Web Frames.
 - 085-5.3.7.4 [RFP] Transverse Bulkheads.
 - 085-5.3.7.5 [RFP] Layup Schedule(s) for FRP Construction (if applicable).
 - 085-5.3.7.6 [RFP] Platform Deck Plating and Supports.
 - 085-5.3.7.7 [RFP] Main Deck Construction.
 - 085-5.3.7.8 [RFP] Deckhouse Construction.
 - 085-5.3.8 [RFP] Structural Details ([CDRL 085-101](#)).
 - 085-5.3.8.1 [RFP] Structural Scantling Drawings and Details.
 - 085-5.3.8.2 [RFP] Struts and Stern Tubes.
 - 085-5.3.8.3 [RFP] Seachest and Transducer Wells.
 - 085-5.3.8.4 [RFP] Mast.

- 085-5.3.8.5 [RFP] Foundations (including main engine, deck machinery, 25mm gun).
- 085-5.3.9 [RFP] Schedule of Door, Manholes and hatches ([CDRL 085-102](#)).
- 085-5.3.10 [RFP] Machinery Arrangement ([CDRL 085-200](#)).
 - 085-5.3.10.1 [RFP] Main Machinery Arrangement.
 - 085-5.3.10.2 [RFP] Auxiliary Machinery Arrangement.
 - 085-5.3.10.3 [RFP] Main Propulsion and Auxiliary Diesel Installation Plans.
- 085-5.3.11 [RFP] Propulsion Controls, Monitoring and Remote Shutdown Diagram ([CDRL 085-201](#)).
- 085-5.3.12 [RFP] Propulsion Shafting Arrangement ([CDRL 085-202](#)).
- 085-5.3.13 [RFP] Propeller (or Water Jet) Plans and Data ([CDRL 085-203](#)).
- 085-5.3.14 [RFP] Electrical One Line Diagram ([CDRL 085-300](#)).
- 085-5.3.15 [RFP] Electrical Power Distribution Deck Plans ([CDRL 085-301](#)).
 - 085-5.3.15.1 [RFP] Cableways and Penetrations.
 - 085-5.3.15.2 [RFP] Electrical Arrangement.
 - 085-5.3.15.3 [RFP] Distribution Panel Installation and Details.
- 085-5.3.16 [RFP] Generator Sets, Switchboards ([CDRL 085-302](#)).
 - 085-5.3.16.1 [RFP] Interconnecting Wiring.
 - 085-5.3.16.2 [RFP] Control and Monitoring Details.
- 085-5.3.17 [RFP] Lighting System ([CDRL 085-303](#)).
 - 085-5.3.17.1 [RFP] Deck Plan/Schematic/Wiring.
 - 085-5.3.17.2 [RFP] Lights and Switches, Installation.
- 085-5.3.18 [RFP] Alarm System Diagram ([CDRL 085-304](#)).
- 085-5.3.19 [RFP] Command and Control Arrangements ([CDRL 085-400](#)).
- 085-5.3.20 [RFP] Antennae Arrangement and Installation ([CDRL 085-401](#)).
- 085-5.3.21 [RFP] Electrical Navigation Aids ([CDRL 085-402](#)).
 - 085-5.3.21.1 [RFP] Navigation, Anchor, Task Lights, and Searchlights.
 - 085-5.3.21.2 [RFP] Control and Dimmer Panels.
 - 085-5.3.21.3 [RFP] Schematics and Wiring Diagrams.
- 085-5.3.22 [RFP] Electronic Navigation Systems ([CDRL 085-403](#)).
 - 085-5.3.22.1 [RFP] Radio and Acoustical.
 - 085-5.3.22.2 [RFP] Schematics and Wiring Diagrams.
- 085-5.3.23 [RFP] Communication Systems ([CDRL 085-404](#)).
 - 085-5.3.23.1 [RFP] Schematics and Wiring Diagrams.
- 085-5.3.24 [RFP] C4ISR System Block Diagram ([CDRL 085-405](#)).
 - 085-5.3.24.1 [RFP] Schematics and Wiring Diagrams.

- 085-5.3.25 [RFP] Piping and Mechanical System Diagrams ([CDRL 085-500](#)) including but not limited to the following:
- 085-5.3.25.1 [RFP] Main and Auxiliary Cooling System (includes MDE and DG seawater, MDE and DG jacket water, MDE and DG keep warm systems).
 - 085-5.3.25.2 [RFP] Exhaust Piping and Air Intake System.
 - 085-5.3.25.3 [RFP] Fuel Oil Service and Transfer System.
 - 085-5.3.25.4 [RFP] Lube Oil Service and Transfer System.
 - 085-5.3.25.5 [RFP] Heating, Ventilation & Air Conditioning.
 - 085-5.3.25.6 [RFP] Seawater Service System(s).
 - 085-5.3.25.7 [RFP] Firemain System.
 - 085-5.3.25.8 [RFP] Interior and Weather Deck Drains.
 - 085-5.3.25.9 [RFP] Bilge and Ballast System.
 - 085-5.3.25.10 [RFP] Potable Water System.
 - 085-5.3.25.11 FRC-B] Fixed Fire Extinguishing System.
 - 085-5.3.25.12 [RFP] Hydraulic System(s).
 - 085-5.3.25.13 [RFP] Steering Gear System.
 - 085-5.3.25.14 [RFP] Air Conditioning Chilled Water System (if applicable).
 - 085-5.3.25.15 [RFP] Starting and Compressed Air System (if applicable).
 - 085-5.3.25.16 [RFP] Sewage and Gray Water.
 - 085-5.3.25.17 [RFP] Vents, Sounds and Overflows.
 - 085-5.3.25.18 [RFP] Oily Bilge Collecting System.
- 085-5.4 [RFP] Machinery System Arrangement Drawings ([CDRL 085-501](#)), including but not limited to:
- 085-5.4.1 [RFP] Main and Auxiliary Cooling System.
 - 085-5.4.2 [RFP] Exhaust Piping and Air Intake System.
 - 085-5.4.3 [RFP] Fuel Oil Service and Transfer System.
 - 085-5.4.4 [RFP] Lube Oil Service and Transfer System.
 - 085-5.4.5 [RFP] Heating, Ventilation & Air Conditioning.
 - 085-5.4.6 [RFP] Seawater Service system diagram(s).
 - 085-5.4.7 [RFP] Firemain system.
 - 085-5.4.8 [RFP] Interior and Weather Deck Drains.
 - 085-5.4.9 [RFP] Bilge and Ballast system.
 - 085-5.4.10 [RFP] Fresh and Potable water system.
 - 085-5.4.11 [RFP] Fixed Fire extinguishing system.
 - 085-5.4.12 [RFP] Hydraulic systems.
 - 085-5.4.13 [RFP] Steering gear system.

- 085-5.4.14 [RFP] Air Conditioning Chilled Water System (if applicable).
- 085-5.4.15 [RFP] Starting and Compressed Air System (if applicable).
- 085-5.4.16 [RFP] Sewage and Gray Water.
- 085-5.4.17 [RFP] Vents, Sounds and Overflows.
- 085-5.4.18 [RFP] Oily Bilge Collecting System.
- 085-5.5 [RFP] Hose Log ([CDRL 085-502](#)).
- 085-5.6 [RFP] Auxiliary Diesel Engines ([CDRL 085-503](#)).
- 085-5.7 [RFP] Miscellaneous Tanks ([CDRL 085-504](#)).
- 085-5.8 [RFP] Portable Fire Extinguishers Arrangement ([CDRL 085-505](#)).
- 085-5.9 [RFP] Anchoring, Mooring and Towing Arrangements Arrangements ([CDRL 085-506](#)).
- 085-5.10 [RFP] Cutter Boat Handling and Stowage ([CDRL 085-600](#)).
- 085-5.11 [RFP] Name Plates ([CDRL 085-601](#)).
 - 085-5.11.1 [RFP] Builders Plaque.
 - 085-5.11.2 [RFP] Draft Marks.
 - 085-5.11.3 [RFP] Labels.
 - 085-5.11.4 [RFP] Visual Identification.
- 085-5.12 [RFP] Outfittings ([CDRL 085-602](#)).
 - 085-5.12.1 [RFP] Hull Fittings including mooring fittings; special hull fittings.
 - 085-5.12.2 [RFP] Handrails and Lifelines.
 - 085-5.12.3 [RFP] Rigging, Canvas and Curtains.
 - 085-5.12.4 [RFP] Non-structural Bulkheads.
 - 085-5.12.5 [RFP] Floor Plates and Gratings.
 - 085-5.12.6 [RFP] Ladders and Steps.
 - 085-5.12.7 [RFP] Non-structural Closures.
 - 085-5.12.8 [RFP] Windows and Defrosting systems.
 - 085-5.12.9 [RFP] Paint and Preservation schedule.
- 085-5.13 [RFP] Life Saving Equipment Arrangement and Details ([CDRL 085-603](#)).
- 085-5.14 [RFP] Paint Schedule ([CDRL 085-604](#)).
 - 085-5.14.1 [RFP] Deck coverings.
 - 085-5.14.2 [RFP] Corrosion Prevention Plan.
- 085-5.15 [RFP] Cathodic protection, System Block Diagram, Schematic and Wiring (if applicable) ([CDRL 085-605](#)).
- 085-5.16 [RFP] Hull Insulation and Sheathing ([CDRL 085-606](#)).
- 085-5.17 [RFP] Living Compartments and Arrangements ([CDRL 085-607](#)).
 - 085-5.17.1 [RFP] Berthing and Messing Arrangements and Details.

- 085-5.17.2 [RFP] Head and Shower Arrangement.
- 085-5.17.3 [RFP] Galley Arrangement and Details.
- 085-5.17.4 [RFP] Built-in Furniture.
- 085-5.17.5 [RFP] Portable Furniture.
- 085-5.17.6 [RFP] Construction Details of Furniture.
- 085-5.17.7 [RFP] Workshop Drawings of Furniture and Furnishings.
- 085-5.18 [RFP] Lockers and Special Stowage ([CDRL 085-608](#)).
- 085-5.18.1 [RFP] Weapons Mounts.
- 085-5.18.2 [RFP] Small Arms Stowage.
- 085-5.18.3 [RFP] Ready Service Locker(s).
- 085-5.18.4 [RFP] Pyrotechnics Locker(s).
- 085-5.18.5 [RFP] Stowage Plan.
- 085-5.18.6 [RFP] Damage Control (DC) Locker.
- 085-5.18.7 [RFP] Life Saving Equipment Arrangement and Details.
- 085-5.19 [RFP] Equipment Removal Plan ([CDRL 085-204](#)).

085-6 [RFP] Supplemental Requirements for Drawings

- 085-6.1 [RFP] Lines and offsets. This drawing shall show, along with the standard information required to define the hull form, all the frames and bulkheads listed in the hull structural drawings and their relationship to Station 0. The shaft line shall be shown and dimensioned along with location of major hull appendages.
- 085-6.2 [RFP] Machinery arrangements. This/these drawing/drawings shall be developed for showing the major components, in sufficient detail, to justify the basic configurations and space allocations reflected in the design. Plan views, inboard profiles and section views shall be used so that all major components are shown in at least two separate views. Drawings shall indicate required access clearances for routine maintenance and repair but not for removal of the machinery. The drawings shall show the locations of all major components within each machinery space including, but not limited to tankage, ventilation, hull structure and closures, pumps, motors and major electrical equipment. The drawings shall identify each piece of equipment shown. The frames and bulkheads shall be clearly shown in all these drawings.
- 085-6.3 [RFP] System Diagrams. All piping, electrical or HVAC systems shall have a diagram depicting the function and interconnections of the components in the system within the plan views of the ship structure. All components that provide functional effect on the system shall be depicted.
- 085-6.4 [RFP] In addition, Piping and Mechanical Diagrams shall include valves and piping connections that can be disconnected in the course of normal servicing. Permanent joints such as threaded, welded or soldered pipe connections need not be depicted. Components and their interconnections shall be located as required for clarity in comprehending the functionality of the system and shall not be to scale in the diagram. Components shall be depicted as symbols and all diagrams shall include a symbol list including all symbols used. Hose and pipe shall be distinguished from each other. Diagrams shall include tables with major

component characteristics such as flow rates, pressure settings, sizing information, etc. Where appropriate, flow quantities, pressures, directions and nominal pipe sizes shall be shown as text near or leader to the line depicted.

- 085-6.5 [RFP] In addition, Electrical Diagrams shall depict any electrical or electronic switch, fuse or other discrete component, except that terminals, terminal connectors and other similar conductors need not be separately depicted from the wire. Cable types, gauges, fuse and component ratings shall also designated on the diagram.
- 085-6.6 [RFP] Diagrams need not have a bill of material. Any component depicted on a diagram shall also be located and depicted on an arrangement drawing. All drawings shall be of sufficient clarity that reduced size prints (11" x 17") shall be fully legible.
- 085-6.7 [RFP] General arrangements. This/these drawing/drawings shall be developed for showing the major components, in sufficient detail, to justify the basic configurations and space allocations reflected in the design. Outboard profile, plan views, inboard profiles and section views shall be used so that all major components are shown in at least two separate views. The drawings shall identify each piece of equipment shown. On the outboard profile, the full load waterline shall be shown, labeled and dimensioned, the underwater hull and appendages and a dimension for the navigational draft shall be shown, the heights above the full load waterline of the major structural components shown and the height at the highest point of the cutter. The frames and bulkheads shall be clearly shown in all these drawings.
- 085-6.8 [RFP] Data systems. Data system drawings shall clearly show the data being transmitted and the communication protocol used for each data line (i.e. RS-232, RS-422).

085-7 [RFP] Final Drawings

- 085-7.1 [RFP] Final Drawings shall be developed during vessel construction and submitted to the Contracting Officer prior to vessel delivery. The Final Drawings shall be the Ship Construction Drawings with necessary revisions to reflect the "as-built" configuration of the FRC-B after completion of the Preliminary Acceptance Trials.
- 085-7.2 [RFP] Revisions shall be made in accordance with [COMDTINST M9000.6E](#), Naval Engineering Manual, Chapter 085.

085-8 [RFP] Selected Record Drawings

- 085-8.1 [RFP] Selected Record Drawings (SRDs) shall be developed ([CDRL 085-005](#)) and maintained throughout the course of the contract, commencing with delivery of the first vessel and continuing through completion of the last vessel's warranty period. The SRDs are a set of class-wide configuration control drawings, in addition to the construction drawings and final "as built" drawings. They are provided at the end of construction of the class and shall identify the configuration of every FRC-B in the class.

085-9 [RFP] Calculations

- 085-9.1 [RFP] Contractor engineering calculations and analyses shall be developed to demonstrate that the FRC-B design conforms to the requirements of this COR and invoked references in all areas.

- 085-9.2 [RFP] The calculations shall consist, at a minimum, of the following:
- 085-9.2.1 [RFP] Fuel Endurance Calculations ([CDRL 085-011](#)).
 - 085-9.2.1.1 [RFP] Noise Analysis.
 - 085-9.2.1.1.1 [RFP] Ship/Shaft Vibration Analyses.
 - 085-9.2.1.1.2 [RFP] Propulsion Torsional Vibration Analysis.
 - 085-9.2.2 [RFP] Seakeeping Analyses ([CDRL 085-012](#)).
 - 085-9.2.3 [RFP] Intact & Damage Stability Analysis ([CDRL 085-013](#)).
 - 085-9.2.4 [RFP] Weight Estimate ([CDRL 085-014](#)).
 - 085-9.2.5 [RFP] Speed-Power Analysis ([CDRL 085-015](#)).
 - 085-9.2.6 [RFP] Hull Structural Load and Strength Analysis ([CDRL 085-110](#)).
 - 085-9.2.6.1 [RFP] Finite Element Analysis.
 - 085-9.2.6.2 [RFP] Structural Fatigue Life Analysis.
 - 085-9.2.6.3 [RFP] Mast Vibration and Structural Analysis.
 - 085-9.2.6.4 [RFP] Miscellaneous Structural Analyses.
 - 085-9.2.6.5 [RFP] Key Structural Foundations (engine girders, main gun).
 - 085-9.2.7 [RFP] Propulsion Analysis and Calculations.
 - 085-9.2.7.1 [RFP] Main Propulsion Engines ([CDRL 073-006](#)).
 - 085-9.2.7.2 [RFP] Reduction Gears ([CDRL 073-006](#)).
 - 085-9.2.7.3 [RFP] Shaft Design Analysis ([CDRL 085-210](#)).
 - 085-9.2.7.4 [RFP] Propulsor Calculations ([CDRL 245-001](#)).
 - 085-9.2.8 [RFP] Auxiliary Systems ([CDRL 085-510](#)) including, but not limited to the following:
 - 085-9.2.8.1 [RFP] Potable water system.
 - 085-9.2.8.2 [RFP] Sewage and Grey Water.
 - 085-9.2.8.3 [RFP] Interior and Weather Deck Drains.
 - 085-9.2.8.4 [RFP] Fuel Oil Service and Transfer System.
 - 085-9.2.8.5 [RFP] Fire Protection: Fireman and Fixed Fire Extinguishing Systems.
 - 085-9.2.8.6 [RFP] Seawater service system(s).
 - 085-9.2.8.7 [RFP] Bilge and Ballast system.
 - 085-9.2.8.8 [RFP] Engine Intakes and Exhausts.
 - 085-9.2.8.9 [RFP] Hydraulic systems.
 - 085-9.2.8.10 [RFP] Starting Air System (if applicable).
 - 085-9.2.8.11 [RFP] Oily Bilge Collecting System.
 - 085-9.2.8.12 [RFP] Vents, Sounds and Overflows.
 - 085-9.2.8.13 [RFP] Steering gear system.
 - 085-9.2.9 [RFP] Heating, Ventilation & Air Conditioning ([CDRL 085-511](#)).

- 085-9.2.10 [RFP] Mooring, Towing and Anchoring Systems ([CDRL 085-512](#)).
- 085-9.2.11 [RFP] Cathodic Protection System ([CDRL 085-310](#)).
- 085-9.2.12 [RFP] Lighting Calculations ([CDRL 085-311](#)).
- 085-9.2.13 [RFP] Preliminary EPLA ([CDRL 085-312](#)).
- 085-9.2.14 [RFP] Electrical Plant Load and Power Analysis ([CDRL 085-313](#)).
 - 085-9.2.14.1 [RFP] Electrical Cable Voltage Drop Calculations.
 - 085-9.2.14.2 [RFP] Electrical Cable Voltage Dip Calculations.
 - 085-9.2.14.3 [RFP] Fault Current Analysis.
 - 085-9.2.14.4 [RFP] Coordination of Power Systems Study/Report.
 - 085-9.2.14.5 [RFP] Electrical Harmonic Analysis.
- 085-9.2.15 [RFP] Failure Modes and Effects Analysis (FMEA) ([CDRL 085-314](#)).
- 085-9.2.16 [RFP] Digital Data Signal Summary and System Capacity Calculations ([CDRL 085-410](#)).
- 085-9.2.17 [RFP] Cutter Boat Launch and Recovery Analysis ([CDRL 085-610](#)).
- 085-9.2.18 [RFP] Replenishment at Sea Analysis ([CDRL 085-611](#)).
- 085-9.2.19 [RFP] Cradle Structural Design Calculations include Loads, Shipping, Tie downs and Lifting ([CDRL 085-613](#)).
- 085-9.2.20 [A006] Diesel engine starting battery rating calculations ([CDRL 085-315](#)).

085-10 [RFP] Lists

- 085-10.1 [RFP] The following lists shall be developed and provided for the FRC-B:
 - 085-10.1.1 [RFP] A Master Lubricant Table Report (see COR Section 540-1) ([CDRL 085-006](#));

085-11 [RFP] 3-Dimensional Technical Data Package (3D TDP)

- 085-11.1 [RFP] A 3-Dimensional Technical Data Package (3D TDP) ([CDRL 085-007](#)) shall be developed for the cutters built under this contract. The 3D TDP shall comprise one or more linked 3-dimensional CAD files (3D models) and associated electronic lists. Product model data and product drawings, design and technical data and associated lists submitted as part of the 3-D Technical Data Package shall be prepared in accordance with [MIL-DTL-31000C](#). The 3-D TDP shall support operational use; logistic support; repair; modification; and maintenance of the cutter.
 - 085-11.1.1 [A014] If the 3D TDP is provided in a software application other than AutoCAD 2005, or later release, three stand-alone workstations shall be provided to the Government with individual licenses for that software. The workstations shall meet no less than the minimum requirements to properly run the software and shall be provided with LCD displays of at least 21" diagonal in size. These workstations and software licenses shall be kept current and maintained at the contractor's expense for the duration of the contract. The workstations shall be delivered to Commandant (CG-936) and to the ELC (023) at the addresses specified in Contract [Section F](#) and to the PRO office required in COR SECTION 087.

- 085-11.2 [RFP] As required in 3.1.2 of [MIL-DTL-31000C](#), the product model shall be complete, accurate, fully defined representations of the item and contain every feature the item being represented is intended to contain. All information, including but not limited to data required by CDRs, necessary to adequately define the item shall be contained in the 3D model to include but not limited to materials, tolerances, geometric tolerances, drawing notes, revision data, etc. 3D models shall be in accordance with [\(ISO\) 10303 Standard for the Exchange of Product model data \(STEP\)](#), or in a native 3D CAD format capable of being exported to ISO 10303 STEP format.
- 085-11.3 [RFP] The 3D TDP shall provide for the following minimum functionality:
- 085-11.4 [A010] The 3D TDP shall be fully three dimensional, and meet the requirements of [ISO 10303-203:1994/Cor.3:2004\(E\)](#). The USCG will use AutoCAD™ 2005 (or a later version) to verify 3D TDP compliance with the requirements. All physical components shall be depicted or modeled in their true location, shape and orientation in one or more three dimensional CAD files.
- 085-11.5 [RFP] In general, a 3D TDP shall be structured as nested CAD files that depict components, and which in turn are contained within other files as compiled shapes (“SHXs”) blocks or “external references” drawings which may themselves be nested into a higher layer drawing. Each separable physical component shall be modeled as one drawing entity at the highest (most inclusive) level of nesting so that it may be selected as one item, not a collection of drawing entities. (Components may be a single entity at any level below the highest level at the contractor’s option.) Depictions of purely geometric entities, such as molded lines, arbitrary datum lines or planes, or other entities that do not depict actual physical components but add useful information to the model, may be included at the contractor’s option, and because they do not depict physical objects, are not subject to this limitation. Special entities, such as weld path depictions for subsequent use by robotic equipment, are also not subject to this limitation.
- 085-11.6 [RFP] The 3D TDP shall not have any redundant models of parts, components, or geometry. There shall be only one model of any physical item in the 3D TDP.
- 085-11.7 [RFP] The 3D TDP may contain depictions of components in an in-process condition, such as flat parts prior to bending or forming, cast parts prior to machining, and similar parts in a form not ready to install on the cutter, at the contractor’s option. This shall not be considered a redundant depiction. Any depictions or models of parts in an in-process condition shall be readily distinguished from the as-installed depictions by layering conventions, distinctive part numbers, separable externally referenced files or similar techniques that allow such in-process parts to be readily removed from a display or other database. In-process parts do not have a meaningful location prior to final installation and may be located at any location or orientation in the model. In-process parts may also be omitted from the 3D TDP.
- 085-11.8 [RFP] Components shall not have needlessly complicated or data dense depictions. Parts may be depicted as a block, surface or solid showing the volume of space it occupies to a precision appropriate to the need for avoiding interferences with the installed component. Small items may be designated as a simple symbol in the contractor’s format. As an example, a fastener may be depicted as a block comprising a line with attached attributes describing it, but shall not be depicted as a solid with all threads modeled.

- 085-11.9 [RFP] Any component, including structural components that are subsequently joined by welding or any other means, shall include as a separable attribute, the weight and the x, y, and z, coordinates of the center of gravity. This information shall be a linked, non-graphic entity capable of being extracted from the 3D TDP by automatic processes.

085-12 [RFP] 2-Dimensional (2D) Product Drawings and Associated List

- 085-12.1 [A010] 2D product drawings and associated lists shall be developed ([CDRL 085-008](#)) from the 3D TDP by means of 2 dimensional "Paper Space" techniques, "Paper Space" techniques augmented by special software tools, or other methods that generate conventional 2D drawings from the 3D TDP. Such derived drawings shall be in AutoCAD™ 2005, or later versions of AutoCAD, DWG format, developed by Autodesk, Inc. Sausalito, California, in accordance with [CDRL 085-008](#). Files, optical and magnetic media shall be formatted to be readable by the Microsoft Windows XP™ operating system. All drawings shall be made with all details of the drawing drawn full scale within the AutoCAD™ database and reduced by the use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Optical scanning shall not be used to meet these requirements. Elements of such drawings not depicting the parts or components actual physical configuration such as text, dimensioning, title blocks and similar drafting elements shall not be part of the 3D TDP itself, but the contractor shall provide for automatic derivation of such drawings. Contractor shall provide templates and all other files required to generate 2D Engineering Drawings.
- 085-12.2 [RFP] 2D product drawings shall be comprised of printable depictions of all components in the cutter in their actual location and size. All physical components on the cutter shall be listed on a bill of materials on the drawing where they are defined and shall appear on only one such bill of materials in the entire drawing set. All components used to build the cutter shall be included on the bills of materials, including bulk materials such as adhesives, except that welding consumables need not be listed. All components salient features shall be identified including the actual manufacturer and their part number for the component, if available. Distributors' part numbers such as McMaster-Carr or West Marine shall not be used. National Stock Numbers shall be used for any components that have them.
- 085-12.3 [RFP] All components including piping, electrical wiring and all other components, except minor components such as cable ties, adhesives or other bulk materials on the cutter, shall be depicted on an arrangement drawing in their true size, location and orientation. Purchased components may be depicted as simple shapes having the same outside dimensions of the object depicted. All interfaces created by the builder of the cutter shall be depicted including fasteners, pipe joints and terminal strips.
- 085-12.4 [RFP] The nominal molded surface of the watertight envelope of the cutter shall be disclosed in "lines drawings" of the hull and superstructure. In addition to the conventional sections, waterlines, chines and buttocks used in defining the watertight envelope, control lines and surfaces (such as tangencies and the axis, radii of any bow cones, transom, transom corners or similar features) shall be depicted. The molded surface shall be numerically defined as well, by a table of offsets, or dimensions on the body of the drawing or some combination.

Depicting and dimensioning or providing tables of offsets for typical rulings of developable surfaces is not required, though it is encouraged.

- 085-12.5 [RFP] All structure shall be depicted on structural arrangement drawings. Location and configuration of all structural components including holes for fasteners, piping or wiring shall be dimensioned even if they are numerically cut. Note that this allows components forming the molded surface of the hull to be derived from dimensions disclosed on the lines drawing, so such components need not be separately dimensioned on their structural arrangement drawing. Structural drawings shall include welding. The structural drawings may refer to specific notes or paragraphs in the welding procedure documentation by annotations on the general notes or in the tail of the welding symbol.

085-13 [RFP] Master Equipment Configuration List (MECL)

- 085-13.1 [RFP] A Master Equipment Configuration List (MECL) shall be developed and reported in accordance ([CDRL 085-009](#)). The MECL shall be a relational data structure documenting the configuration of the developmental, pre-product and product baselines, the configuration of each FRC-B, and approved revised versions of each of these lists as they mature and change over the contract performance period.
- 085-13.2 [RFP] The MECL shall be developed as a hierarchical configuration tree containing all configuration items that are part of the FRC-B System, using Coast Guard ESWBS/HSC.
- 085-13.2.1 [RFP] A configuration item is defined as the Configuration Item Line Replaceable Unit (CILRU) that is an essential support item which is removed and replaced at the field level to restore the cutter platform, taken as a whole, to an operationally ready condition. In some cases the CILRU will be an individual item (engine) or piece-part (light bulb) and in other cases will be a significant part or component of a system which comprises a higher-level CILRU (oil pump). Conversely, a non-CILRU defined item is a part, component, or assembly used in the repair of a CILRU when the CILRU has failed and has been removed from the CILRU end item for repair. An example of the level of granularity required for a CILRU is provided as an attachment to [CDRL 085-009](#).
- 085-13.2.2 [RFP] The following are also defined as CILRUs and shall be included in the MECL:
- 085-13.2.2.1 [RFP] Government Furnished Equipment (GFE).
- 085-13.2.2.2 [RFP] Any item that is the subject of a Maintenance Procedure Card (MPC) identified and developed as a result of the Reliability Centered Maintenance (RCM) requirements and reported in [CDRL 081-001](#).
- 085-13.3 [RFP] The MECL shall contain for each CILRU all information necessary to fully describe the actual configuration item installed. At a minimum, the associated data shall include the following fields. Acronym definitions are defined in [COMDTINST M4105.8 System Integrated Logistical Support \(SILS\) Policy](#).
- 085-13.3.1 [RFP] C.I. Nomenclature: Until the product baseline is determined this will be a functional description of the equipment.
- 085-13.3.2 [RFP] Configuration Item Functional Description (CIFD): Until the product baseline is determined this will be a functional structure of major equipment and logistic support for ordinary items requiring regular maintenance.

- 085-13.3.3 [RFP] Date: The date the record was established in the MECL.
- 085-13.3.4 [RFP] Revision: A letter designation for each revision to the line item. (e.g., First revision would be "A", then "B", etc.)
- 085-13.3.5 [RFP] ESWBS/HSC: The appropriate code selected from the ESWBS/HSC list provided as GFI. Each piece of equipment has a unique HSC assignment and is hierarchal per equipment.
- 085-13.3.6 [RFP] Engineering Change Request (ECR) number, if assigned.
- 085-13.3.7 [RFP] Provisioning Document Control Number (PDCN) is a mandatory field used in ICAPS.
- 085-13.3.8 [RFP] Item Nomenclature: OEM/Vendor provided nomenclature.
- 085-13.3.9 [RFP] Quantity: The quantity of components/equipments to be installed.
- 085-13.3.10 [RFP] U/I: Unit of Issue. The unit of issue which pertains to the quantity reported.
- 085-13.3.11 [RFP] U/I Price: Unit of Issue Price. Estimated price in US Dollars for unit of issue reported.
- 085-13.3.12 [RFP] CAGE Code: The original equipment manufacturer's (OEM) Contractor And Government Entity (CAGE) number.
- 085-13.3.13 [RFP] OEM Part Number: The original equipment manufacturer's (OEM) part number.
- 085-13.3.14 [RFP] Equipment Serial Number: Serial number of Depot level supported equipment, if applicable, "N/A" if not.
- 085-13.3.15 [RFP] PTD Req?: This field will be either Y indicating a PTD submittal is required, or N indicating no PTD submittal is required.
- 085-13.3.16 [RFP] TM Req?: This field will be either Y indicating a Tech Manual submittal is required, or N indicating no Tech Manual submittal is required. If "Y" replace with Tech manual number upon receipt.
- 085-13.3.17 [RFP] PMS Req?: This field will be either Y indicating a PMS submittal is required, or N indicating no PMS submittal is required. If "Y" replace with MPC number upon receipt.
- 085-13.3.18 [RFP] Software Req?: This field will be either Y indicating that the equipment has associated software, or N for no software. If "Y", identify the configuration item (CI) that identifies the associated software.
- 085-13.3.19 [RFP] Insurance Spares Indicator: "X" indicates support of equipment requires spares with a lead-time of over of six months, or low reliability that has a negative effect on overall cutter operational availability.
- 085-13.3.20 [RFP] Line Item Deliverable Indicator: This column shall be marked with an "X" indicating that the equipment is a contractor recommended Line Item Deliverable for possible procurement of insurance spare.
- 085-13.3.21 [RFP] Government Design Source Standard Drawing: The Government Furnished item's drawing that identifies the requirement for the component/equipment, if any.

085-13.3.22 [RFP] Associated Maintenance Procedure Card (MPC) number(s) identified and developed as a result of the Reliability Centered Maintenance (RCM) requirements.

085-13.4 [RFP] Notes: Amplifying information, as required.

085-13.4.1 [RFP] The Contractor shall add additional data fields such as Purchase Order (PO) Number, PO Line Item, PO date Activated, etc.

SECTION 086. [RFP] TECHNICAL MANUALS**086-1 [RFP] General**

- 086-1.1 [RFP] Technical Data. The Contractor shall obtain and provide to the Government all technical data, and certain rights to that data, necessary to operate, maintain, diagnose, and repair the FRC-B throughout its lifecycle. In addition to the requirements of other sections of this contract, technical data shall be provided in the form of Commercial Off The Shelf (COTS) technical manuals and contractor-developed Interactive Electronic Technical Publications (IETP).
- 086-1.2 [A005] Format. Unless otherwise stated, all technical data shall be delivered in electronic format, and contractor-developed technical data shall be in eXtensible Markup Language (XML) format, as described in COR Section 086-2.5. Electronic version of COTS technical manuals shall be delivered in Portable Document Format (.pdf) but Contractor-developed derivative works, such as the IETP, must be in XML format. The Contractor shall purchase and deliver the rights to the electronic source material used to develop the COTS technical manuals, thereby simplifying efforts in developing the required derivative works. Technical Manuals shall be formatted in accordance with the ELC specification [D-086-0508](#).
- 086-1.3 [RFP] Data Rights. Special emphasis shall be placed on obtaining and documenting Government rights to the technical data, and appropriately marking the data so the nature of the rights are clearly identified, particularly when Government rights differ from the rights available to the general public.
- 086-1.3.1 [RFP] For technical data not first developed in the performance of this contract for which a copyright is claimed in accordance with [17 U.S.C. 401](#) or [402](#), specifically including COTS manuals, the Contractor shall acquire on the Government's behalf a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted data for the use of the Government to reproduce, prepare derivative works, by or on behalf of the Government. See [FAR 52.227-14\(c\)\(2\)](#) incorporated at [I.1](#).
- 086-1.3.2 [RFP] For restricted computer software, specifically including software and firmware contained in equipment provided in the FRC-B (for example, engine control management systems, propulsion control systems), as well as any additional software used to update or maintain that software or firmware (for example, diagnostics and/or programming software for engine control management systems, propulsion control systems, radios), the Contractor shall acquire on the Government's behalf a paid-up nonexclusive, irrevocable worldwide license in such computer software to use and disclose to support service Contractors and their subcontractors in accordance with [FAR 52.227-14 \(g\)\(3\) \(Alternate III\)](#) and [FAR 52.227-19\(c\)](#) incorporated at [I.1](#).

086-2 [RFP] Interactive Electronic Technical Publication

- 086-2.1 [RFP] General. The Contractor shall develop, deliver and host an Interactive Electronic Technical Publication (IETP) system to provide access to the technical data described in the sections below. The term Interactive Electronic Technical Publication (IETP) may be used synonymously with the term Interactive Electronic Technical Manual (IETM) which is used in some of the references. The purpose of deploying an IETP for disseminating information necessary to operate, maintain, repair, and replace equipment and systems is to maximize

content reuse, both within the publication and across the government enterprise. The Government intends to accept responsibility for the deployment, operation, and maintenance of the IETP at or before the end of the contract performance period.

- 086-2.2 [RFP] Source Information. The Contractor shall obtain and provide standard SGML Tagged IETM source information optimally structured to create survivable data in revisable and economically maintained database by sharing common objectives, and appropriate rights to that information, suitable to form the basis of the data that the Contractor will develop for the IETP. Note: Equipment providers may normally restrict copyright to and use of their source information. Regardless of these restrictions, the Contractor is responsible for obtaining and documenting the rights for the Government to use the source information, as described in COR Section 086-1.3.
- 086-2.2.1 [RFP] The following data products shall be provided for each CILRU identified on the MECL (see section 085-13):
- 086-2.2.1.1 [RFP] Operations Information.
 - 086-2.2.1.2 [RFP] Unit Level Planned Maintenance and Service Information
 - 086-2.2.1.3 [RFP] Illustrated Parts Breakout Data.
 - 086-2.2.1.4 [RFP] Configuration Drawings.
 - 086-2.2.1.5 [RFP] Repair and Maintenance Parts Lists for all repairable assets.
 - 086-2.2.1.6 [RFP] Operations, Programming, and Diagnostics Software.
 - 086-2.2.1.7 [RFP] Programming code(s) embedded within systems or equipment.
- 086-2.2.2 [RFP] For commercial components where the OEM provides suitable source material, the Contractor may obtain and provide the OEM material.
- 086-2.2.3 [RFP] For commercial components where the OEM does not provide suitable source material, the Contract shall either obtain and provide suitable 3rd-party equivalents, or develop and provide a suitable equivalent.
- 086-2.2.4 [RFP] For Contractor developed components, the Contractor shall develop and provide a suitable equivalent.
- 086-2.2.5 [RFP] For components listed on the MECL that are subcomponents of another item on the MECL, if the source material for the parent component contains suitable detail regarding the subcomponent, no additional source material is required for the subcomponent.
- 086-2.2.6 [A009] The Contractor shall provide a list of all the source information products in the Technical Data Index (TDI) described in this COR Section in accordance with [CDRL 086-006](#).
- 086-2.3 [RFP] Content. The Contractor shall develop, provide, and maintain technical data and manuals (TMs) for the FRC-B, installed equipment, support equipment, and training equipment. TMs shall include information necessary for the operation, maintenance, service, and repair of the FRC-B (including illustrated parts breakdowns), to include each piece of equipment on the MECL and the contractor-developed components they comprise. This technical data shall be stored in and delivered from the IETP in a media-rich format, making use of audio and visual instructional functionality to maximize the training effectiveness to the intended operational audience and enhance end user learning. This

technical data shall reflect the configuration of the FRC-B fleet by hull number, specifically to include the ability to identify eventual differences in configuration between hulls and groups of hulls. The [MIL-DTL-24784B](#) series may be used to gain a better understanding of the type of information that could be useful in operating, maintaining, servicing, and repairing components in the FRC-B System. The Contractor shall develop and provide the following content in the IETP, to be delivered as described in this COR Section:

- 086-2.3.1 [RFP] FRC-B Principals of Operations. The Contractor shall develop data to be used to describe the technical orientation, capacities, operational capabilities, performance characteristics, basic operating procedures, limitations, emergency procedures, and standardization of the cutter, major systems, and equipment for the FRC-B class of vessels. This data will be used by FRC-B crews to gain an understanding of the basic operation of the cutter. Principals of Operations data shall include the following:
 - 086-2.3.1.1 [RFP] General Information and Safety Precautions. This information shall depict the precautions necessary to safely operate each piece of equipment on the MECL and the systems comprised of that equipment, and allow for the easy and rapid determination of the purpose, physical and functional characteristics, and operational capabilities of the equipment. This information shall also be sufficient to describe the interface relationships between equipment.
 - 086-2.3.1.2 [RFP] Operations. This information shall depict the procedures necessary to enable personnel to locally operate each piece of equipment on the MECL and the systems comprised of that equipment, in the normal mode.
 - 086-2.3.1.3 [RFP] Emergency Procedures. This information shall depict the procedures necessary to enable personnel to locally operate each piece of equipment on the MECL in emergency mode.
 - 086-2.3.1.4 [RFP] Functional Description. This information shall depict the theory of operation in a simplified manner with supporting illustrations. The data shall be sufficient to describe major subassemblies and develop illustrations.
 - 086-2.3.1.5 [RFP] Special Support Equipment. This information shall include a list of test equipment and special tools required to support, maintain, service, or repair the FRC-B and its equipment. For each item on the list, provide technical nomenclature, manufacturer, manufacturer's CAGE code, model number, operating characteristics, depiction of use, and acceptable substitutes. Special tools shall include metric tools or calibration devices of other than English standard measurement.
- 086-2.3.2 [RFP] The Contractor shall provide commercial equipment manuals, primary vendor drawings, service parts lists, and supplemental data for each equipment installed on the FRC in accordance with [MIL-DTL-24784B \(CDRL 086-001\)](#).
 - 086-2.3.2.1 [RFP] The information shall include assembly and disassembly instructions with comprehensive illustrations showing each step, recommended planned maintenance, complete troubleshooting procedures, basic operating characteristics (such as temperatures, pressures, flow rates, etc.), installation criteria and drawings, complete

illustrated parts lists, and operating and maintenance instructions. Where commercial information covers more than one model or variant, that information which is applicable to the installed equipment shall be clearly indicated and modified as necessary to completely and accurately reflect specific equipment used in the FRC.

- 086-2.3.3 [RFP] The Contractor may supply existing Military Specification Technical Manuals for CFE as required by the CDRL provided the existing Military Specification Technical Manual is applicable to the CFE with regard to configuration. The Contractor shall validate that both Commercial and Military Specification Technical Manuals are applicable to the equipment being supplied.
- 086-2.3.4 [RFP] Planned Maintenance. The Contractor shall develop data that are necessary to perform planned maintenance at the Organizational-Level (O-Level). Maintenance data shall incorporate the Reliability, Maintainability and Availability (RMA) analysis and maintenance procedures required by CDRLs [076-001](#) and [081-001](#).
- 086-2.3.5 [RFP] FRC-B Service Data. The Contractor shall develop additional data that are necessary to document performance of maintenance actions at the Organizational-Level (O-Level) and Depot-Level (D-Level) in a media-rich format.
- 086-2.3.5.1 [RFP] Data shall be developed in sufficient detail to fully document, through the use of the IETP, all maintenance actions identified in the FRC-B Cutter Class Maintenance Plan (FRC-B CCMP).
- 086-2.3.5.2 [RFP] Data shall be developed in sufficient detail to fully document, through the use of the IETP, the performance of all actions required for the removal and installation of all equipment identified in the Master Equipment Configuration List (MECL) ([CDRL 085-009](#)). This information shall describe the procedures necessary to enable personnel to remove and replace or reinstall the equipment. The IETP shall be used to display data, including drawings and other information, in a media rich environment to facilitate installation and removal procedures.
- 086-2.3.6 [A006] Technical Repair Standards (TRS). Data shall be developed that are necessary to perform contractor recommended planned maintenance actions at the Depot-Level (D-Level) in accordance with COR SECTION 081. Maintenance data shall be sufficient to perform Depot level overhauls of selected equipment in accordance with [MIL-DTL-24784/7B](#) and [MIL-DTL-24784B](#). These data shall also be used to provide illustrations and instructional aids to supplement data and procedural descriptions in accordance with [CDRL 086-008](#).
- 086-2.3.7 [RFP] Exploded View Diagrams. Media-rich data shall be developed, for all equipment on the MECL and all contractor-developed assemblies of that equipment, documenting exploded view drawing(s) containing keyed parts lists, and exploded view assemblies containing keyed parts lists. A parts list shall include:
- 086-2.3.7.1 [RFP] Exploded view key number, seller's part number, source manufacturer, source manufacturer's CAGE code, source manufacturer's part or model number, part material, and quantity required for one complete assembly.

- 086-2.3.7.2 [RFP] Designation and identification of commercial items, such as nuts, washers, bolts, keys, and cotter pins, to allow for purchase outside the manufacturer's parts system.
- 086-2.3.7.3 [A009] Reserved.
- 086-2.3.8 [RFP] FRC-B Cutter Information Book (CIB). A CIB shall be prepared in accordance with [CDRL 086-002](#). It shall provide a complete description of the FRC-B's capacities and characteristics and shall contain operating instructions for all systems, equipment, and components in the FRC-B. The information shall be given in sufficient detail to permit following out the systems and circuits of control. System diagrammatics shall be included to supplement the written description. System working drawings may be used in lieu of the diagrammatics upon approval of the Contracting Officer.
- 086-2.3.8.1 [RFP] The CIB shall provide a source of technical information relative to the shipboard arrangements and systems. The CIB shall be titled "Cutter Information Book and Operating Manual for United States Coast Guard Fast Response Cutter" and shall consist of chapters with titles as required by the TMCR.
- 086-2.3.8.2 [RFP] Specifications and final drawings shall be incorporated as applicable.
- 086-2.3.8.3 [RFP] The following references, when applicable, shall be appropriately noted in the text:
- 086-2.3.8.3.1 [RFP] Reference to title and drawing numbers of onboard plans.
- 086-2.3.8.3.2 [RFP] Reference to drawings, drawing indexes, drawing booklets, lists, schedules and publications by their title and number when such documents are easily recognized by such designation. Examples are:
- 086-2.3.8.3.2.1 [RFP] Tank Sounding Tables
- 086-2.3.8.3.2.2 [RFP] Docking Plan
- 086-2.3.8.3.2.3 [RFP] Booklet of Test Memoranda
- 086-2.3.8.3.3 [RFP] Reference to technical publications by title and Coast Guard number.
- 086-2.3.8.4 [RFP] Engineering Operating Procedure (EOP)
- 086-2.3.8.4.1 [RFP] Engineering Operating Procedure (EOP) – This manual shall provide descriptions, operating instructions, operating principles and system level alignment and maintenance not covered in equipment level COTS manuals or elsewhere in the CIB.
- 086-2.3.8.5 [RFP] C4ISR Manuals
- 086-2.3.8.5.1 [RFP] C4ISR System Operations Manual: This manual shall describe the C4ISR suite as an integrated system and provide as required system level maintenance and operation.
- 086-2.3.8.5.2 [RFP] C4ISR Console Operator's Manual: This manual shall provide both task oriented procedures as well as menu and function descriptions for the use of C4ISR console operators.

- 086-2.3.8.5.3 [RFP] C4ISR Network Operations Manual: This manual shall describe network operation, topology and corrective maintenance procedures for the C4ISR networks.
- 086-2.3.8.5.4 [RFP] C4ISR Commercial Manuals: These manuals shall be provided by both subcontractors and directly procured from component vendors. C4ISR commercial manuals shall be provided for supplementary operations and maintenance information. Commercial or subcontractor manuals shall be provided in a legible, subcontractor format. Each supplier developed manual shall be reviewed for acceptability and responsiveness to the technical requirements of the FRC-B Technical Manual requirements as established in this COR Section.
- 086-2.3.8.6 [RFP] The final IETP version of the CIB shall not be in final form until all USCG comments are incorporated. Changes made to drawings, configuration of systems and equipments and procedures that occur during the production contract shall be incorporated into the CIB for each FRC-B that has received the required change.
- 086-2.3.8.7 [RFP] A hard copy deliverable version of the CIB [CDRL 086-002](#) shall be provided with suitable cover to withstand the rigors of frequent usage. Text shall be printed on durable waterproof paper that can withstand exposure to fresh or salt water and can be cleaned with soap and water. The binding shall allow for the addition and removal of material.
- 086-2.3.8.8 [RFP] The Contracting Officer will provide the publication identification number which shall appear on the cover and the title page.
- 086-2.4 [RFP] Technical Data Validation
- 086-2.4.1 [RFP] The adequacy and accuracy shall be validated of all technical data included in the Maintenance Procedure Cards (MPCs), IETP, technical manuals exported from the IETP, COTS technical manuals, change pages, and revisions to all existing manuals. Validation is defined as the final quality assurance iteration required of the contractor or developing activity during which the technical manual is tested for technical adequacy and accuracy and compliance with the provisions of the specifications and other technical contractual requirements. Validation is normally conducted at the developing activity or vendor's facility. In extenuating circumstances, validation may be conducted at an operational site with prior Contracting Officer approval. Changes/Faults shall not be introduced into systems, equipment, firmware, or software for the purpose of technical manual validation. A Technical Manual Validation Certificate shall be prepared in accordance with MIL-DTL-24784A and delivered with every technical publication ([CDRL 086-003](#)).
- 086-2.4.2 [RFP] One of three methods shall be employed for accomplishing validation, using the criteria in COR Section 086-2.4.3.
- 086-2.4.2.1 [RFP] Physical performance method (Type 1). This method consists of physically performing the procedures using the required systems, equipment, and/or software. Physical performance shall include validation of set-up, alignment, operating, troubleshooting and maintenance procedures. Physical performance shall not involve installation, removal, disassembly, and re-assembly of equipment unless these are the only steps by which to validate the technical manual.

Physical performance requires that alignment of the systems, equipment, and/or software be in accordance with the cutter specifications and that support equipment and tools, be those planned for Coast Guard use. In the event some support equipment or tools are not available, suitable substitutes may be used. The substitute items shall be reviewed to ensure there is no degradation of validation.

- 086-2.4.2.2 [RFP] Walk-through simulation method (Type 2). This method consists of on-site determination that the steps of the procedures are correct and can be physically performed. Prerequisite procedures must be considered. Hardware configuration must be noted, as well as interfaces between tools and support equipment. The Contractor shall ensure that references to other technical manuals or publications are appropriate and accurate.
- 086-2.4.2.3 [RFP] Review/analysis method (Type 3). This method consists of desktop review to check the technical integrity of data. Equipment substitutions or anomalies occurring during the validation will be noted. Type 3 Validation may include, but is not limited to, the following:
 - 086-2.4.2.3.1 [RFP] Review of removal, replacement, and troubleshooting instructions for technical adequacy and accuracy.
 - 086-2.4.2.3.2 [RFP] Review of maintenance functions and categories.
 - 086-2.4.2.3.3 [RFP] Review of technical manual schematics, diagrams, wiring data, and descriptive data against construction and equipment drawings for accuracy/adequacy.
 - 086-2.4.2.3.4 [RFP] Review of parts lists, recommended spares lists, special tools, and test equipment required.
 - 086-2.4.2.3.5 [RFP] Ensure adequacy of illustrations and that illustrations agree with text.
 - 086-2.4.2.3.6 [RFP] Ensure references to technical manuals are appropriate and accurate.
- 086-2.4.3 [RFP] Validation Criteria
 - 086-2.4.3.1 [RFP] Type 1 Validation shall be used to the maximum extent practicable for all manuals.
 - 086-2.4.3.2 [RFP] Type 2 Validation shall be used only when Type 1 Validation cannot be used or is impractical. Conditions resulting in the use of Type 2 Validation shall include the following:
 - 086-2.4.3.2.1 [RFP] Whenever procedures would require destructive action, action that introduces permanent modifications or permanent faults, or action that requires removal and replacement of soldered or welded components.
 - 086-2.4.3.2.2 [RFP] Where procedures could result in injury to personnel or damage to equipment.
 - 086-2.4.3.3 [RFP] Type 3 Validation shall be used only when Type 2 Validation cannot be used or is impractical and when Contracting Officer approval has been obtained.

086-2.5 [RFP] IETP Technical Requirements

- 086-2.5.1 [RFP] The contractor shall author and develop an eXtensible Markup Language (XML) schema based type II IETP in accordance with AIS/AECMA International Specification for Technical Publications Utilizing a Common Source Database, [Spec 1000D](http://www.s1000d.org), Issue 2.2, (<http://www.s1000d.org>).
- 086-2.5.1.1 [RFP] The IETP shall be developed for data delivered via the support website, all technical and supply support data in conjunction with the 3D TDP described in Section 085-11, the MECL required by Section 085-13, and the publications required by COR Section 086-2.6. The IETP shall contain sufficient information to operate, maintain, and replace as applicable all equipment and systems.
- 086-2.5.1.2 [RFP] The IETP shall be developed so that access to the system is permission based and view of content is controlled through user profiles. Organizational-Level (O-Level) and Depot-Level (D-Level) personnel provide an example of three distinct user profiles.
- 086-2.5.1.3 [RFP] The IETP shall be delivered in XML format as described in this section. The contractor shall develop an XML schema, defined as an XML data construct defining the structure and content of the type of document to be created. This XML schema will be necessary for management and revision of the XML, HTML, or XHTML documents. The XML schema shall include provisions to incorporate legacy Coast Guard ETPs based on the Document Type Definition (DTD) provided as GFI.
- 086-2.5.1.4 [RFP] The Contractor shall create and use an Interactive Electronic Technical Publication (IETP) Style Guide in accordance with [CDRL 086-004](#) to establish a consistent look and feel for all modules and components of the IETP. ISO standards shall be followed to establish usability requirements. Enclosure 4, "NAVAIR INTERACTIVE ELECTRONIC TECHNICAL MANUALS (IETM) COMMON LOOK AND FEEL REQUIREMENTS", of the "POLICY FOR PREPARATION AND STANDARDIZATION OF NAVAIR INTERACTIVE ELECTRONIC TECHNICAL MANUALS (IETMS)" ([NAVAIRINST 4120.11](#)) shall be utilized to assist in developing the style guide and IETPs.
- 086-2.5.2 [RFP] A requirements document shall be created for the IETP as part of the software development process. The Contractor shall employ a user-centered design process in developing the IETP requirements. ISO standards [13407](#) and [16982](#) shall be used as guidance. The IETP Functionality Matrix provided as GFI shall be used as the basis of the requirements development process. This matrix was derived from the Aerospace Industries Association (AIA) IETP functionality matrix (included in AECMA Specification S1000D). Type II functionality shall be met.
- 086-2.5.3 [RFP] [MIL-PRF-28001](#) and W3C Recommendation, "Extensible Markup Language (XML) 1.0 (Third Edition)" may be utilized as guidance in the development of XML digital format IETP.
- 086-2.5.4 [RFP] The IETP shall be developed and deployed via a multi-tiered open architecture with the user interface consisting of a web browser and associated plug-ins that are part of the Coast Guard Standard Workstation (CGSW) standard image. The CGSW standard image currently supports

Microsoft Internet Explorer v6.0 and Macromedia Flash v7.0. Other plug-ins for delivering media-rich content may be approved by the Contracting Officer.

- 086-2.5.5 [RFP] A web-based content maintenance tool shall be developed and deployed to create, update, and maintain IETP content. The tool shall support two levels of users, one to support various content development subject matter experts in drafting changes, and one to allow configuration managers to review and approve those changes. Access to the tool for approval of changes shall be restricted to Contractor Configuration Managers.

086-2.6 [RFP] Delivery

- 086-2.6.1 [RFP] The following Type II IETP content shall be delivered via the system described in COR Section 086-2.5.4 and the user roles-based environment described in COR Section 086-2.5.1.2:

086-2.6.1.1 [RFP] Principals of Operation, as described in COR Section 086-2.3.1.

086-2.6.1.2 [RFP] Planned Maintenance, as described in COR Section 086-2.3.2.

086-2.6.1.3 [RFP] Service Data, as described in COR Section 086-2.3.5.

086-2.6.1.4 [RFP] Technical Repair Standards, as described in COR Section 086-2.3.6.

086-2.6.1.5 [RFP] Exploded view Diagrams, as described in COR Section 086-2.3.7.

- 086-2.6.2 [RFP] A means shall be provided for users of the Type II IETP to publish the following Type I technical publications, in whole or in part, from within the IETP:

086-2.6.2.1 [RFP] FRC-B Organizational Maintenance Manual. The FRC-B Organizational Maintenance Manual shall be available in a version applicable to the entire FRC-B class of cutters and a version specific to a single hull number. In addition, the IETP shall provide a means to publish an individual maintenance procedure.

086-2.6.2.2 [RFP] Source Information. The Source Information provided in response to the requirements at COR Section 086-2.2 shall be made available through the IETP for users who desire more detailed information. Access shall be provided to the electronic format from an index applicable to the entire class of cutters, from an index specific to a single hull number, and contextually from within content developed in response to the requirements of COR Section 086-2.3.

- 086-2.6.3 [RFP] At some point prior to the end of the contract performance period, the Government intends to accept responsibility for the deployment, operation, and maintenance of the IETP. At the end of the contract performance period, or when notified by the Contracting Officer, the Contractor will cease operating the IETP and deliver the system, software, source code, data, data schema, documentation, and related work products developed by this work effort, including the data, user interface, source code, supporting software, and related documentation to the Government for deployment on a Government system. For IETP data and computer software first produced in the performance of this contract for which no copyright claim is established, the Government shall have unlimited rights to such data and computer software. See [FAR 52.227-14\(b\)\(1\)](#). For IETP data and computer software

first produced in the performance of this contract for which the Contractor establishes claim to copyright, the Contractor shall grant to the Government, and other acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license for all such data and computer software to reproduce, prepare derivative works, and perform publicly and display publicly, by or on behalf of the Government. See [FAR 52.227-14\(c\)\(1\) \(Alt IV\)](#) incorporated at I.1. For any IETP data and computer software not first produced in the performance of this contract, the Contractor shall acquire on the Government's behalf the rights to such data as is described in this COR Section. IETP delivery to the Government shall include the following and similar work products to allow the Government to manage, maintain, edit, and re-author the documents:

- 086-2.6.3.1 [RFP] Database used to store source content of XML files.
- 086-2.6.3.2 [RFP] XML, HTML or XHTML source file(s)
- 086-2.6.3.3 [RFP] Common source database used to populate content in XML/HTML or XHTML files
- 086-2.6.3.4 [RFP] Graphic source files
- 086-2.6.3.5 [RFP] XML Schema
- 086-2.6.3.6 [RFP] Entity files
- 086-2.6.3.7 [RFP] XML Data Dictionary
- 086-2.6.3.8 [RFP] Tagging Conventions Document
- 086-2.6.3.9 [RFP] Any associated style sheets and filter
- 086-2.6.3.10 [RFP] IETP software package, specifically including the source code for the application(s) used to manage and display content, and the maintenance tool required by COR Section 086-2.7.
- 086-2.6.3.11 [RFP] A written description of the hardware, software, and network operating environment specifications used to operate and maintain the IETP including:
 - 086-2.6.3.11.1 [RFP] Software and associated licenses required.
 - 086-2.6.3.11.2 [RFP] Hardware requirements currently being used to deploy the IETP.
 - 086-2.6.3.11.3 [RFP] Any recommended changes to software or hardware requirements due to obsolescence or changes in the industry.
 - 086-2.6.3.11.4 [RFP] Specific deployment and access requirements including the current and projected bandwidth.
 - 086-2.6.3.11.5 [RFP] Number, location, and qualifications of personnel required for maintenance and modification of the IETP.
 - 086-2.6.3.11.6 [RFP] A recommended plan for the orderly transition of responsibility for the IETP from the contractor to the Government.
- 086-2.6.3.12 [RFP] The XML source file shall consist of the technical manual text with the embedded XML tags. This file is what will be stored and maintained in a repository or database at the Government document management activity. Entity files are files associated with the source file that may be created and referenced by the XML schema. Style sheets and filters are

necessary to produce the desired presentation to users. A filter conversion of XML text into an HTML or XHTML file with predetermined format is an acceptable alternative to a style sheet.

086-2.7 [RFP] Technical Data Management

- 086-2.7.1 [RFP] The Contractor shall prepare a Technical Data Organization Plan (TDOP) ([CDRL 086-005](#)) to define the methodology and software development process to be used in creating the IETP and populating the system with the data that are required by COR Section 086-2.3. The TDOP shall describe how the Contractor will identify, develop, and validate the IETP system and the technical data published in the IETP and technical publications. The TDOP shall also identify how changes to the IETP will be developed and implemented, and how and the content will be managed by the Configuration Control process of COR Section 041-4 . Include major milestones to be scheduled on the Integrated Master Schedule.
- 086-2.7.2 [RFP] A Technical Data Index (TDI) shall be prepared and maintained which lists all cutter system and equipment cross referenced with their respective IETP content types required by COR Section 086-2.3, and their respective source information required by COR Section 086-2.2. Submit the TDI in accordance with [CDRL 086-006](#).
- 086-2.7.3 [RFP] A Technical Data Status Report (TDSR) shall be prepared and delivered in accordance with [CDRL 086-007](#) to report on the development of the IETP and content types listed in the TDI.

086-2.8 [RFP] Technical Data Maintenance

- 086-2.8.1 [RFP] The IETP, including the user interface, source code, supporting software, related documentation shall be maintained.
 - 086-2.8.1.1 [RFP] Feedback received from the field shall be used by the Government to prioritize maintenance of the IETP. The Contractor shall analyze this feedback to validate the cause of the issue and present the Government with a proposed list of priorities. Issues associated with accuracy of any of the IETP content shall be routed to the appropriate person responsible for content maintenance as described in COR Section 086-2.8.2.
- 086-2.8.2 [RFP] The data stored in the IETP shall be maintained.
 - 086-2.8.2.1 [RFP] Changes to the configuration without shall not be made without approved direction from the Configuration Control process described in COR Section 041-4.
 - 086-2.8.2.2 [RFP] The IETP shall be capable of accommodating changes to technical data that result from Approved Engineering Changes.
 - 086-2.8.2.3 [RFP] The IETP shall retain a history of changes made to the data and provide a means for users to rapidly determine what, how, and when information has changed.
 - 086-2.8.2.4 [RFP] The Contractor shall notify the user community when content changes are approved, to alert users who are in the practice of working from paper versions of the IETP content.

SECTION 087. [RFP] FACILITIES**087-1 [RFP] Project Resident Office (PRO)**

- 087-1.1 [RFP] The Coast Guard will establish a Project Resident Office (PRO) at the contractor's production facility to conduct contract administration, facilitate the delivery of the FRC-B System, and assess contractor compliance with the terms of the contract. Presence of the PRO does not relieve the contractor of the responsibility of complying with the terms of the contract.
- 087-1.2 [RFP] The contractor shall provide and maintain facilities and parking to support a staff of approximately thirty personnel, including military, government civilian, and contracted support personnel. The facilities shall be within a reasonable walking distance of the contractor's offices and production area. PRO personnel shall have access to the facilities twenty-four hours per day, seven days per week. Contractor personnel shall not have access to PRO facilities without Coast Guard approval.
- 087-1.3 [RFP] If the contractor has more than one production line, for each production line separated by more than 10 miles from the first production line, the contractor shall provide and maintain facilities to accommodate approximately ten personnel, with the same requirements as those provided under paragraph 087-3.1.
- 087-1.4 [RFP] The contractor shall make reasonable arrangements to allow the Coast Guard to conduct occasional military ceremonies at the PRO facilities, including a formal stand-up ceremony that may be attended by local, state, and federal representatives, a formal change of command ceremony held approximately every two years, formal visits and inspections by Flag officers held approximately annually, and occasional informal visits by Coast Guard and Other Government Agency representatives.

087-2 [RFP] Temporary PRO Facilities

- 087-2.1 [RFP] Within five calendar days after contract award, the contractor shall:
- 087-2.1.1 [RFP] Provide the address and exact location of the point of demarcation to be used for a Coast Guard furnished commercial T1 connection to the Coast Guard Data Network (CGDN). The Coast Guard will use this address and location to separately arrange for the installation of the CGDN circuit through a commercial provider.
- 087-2.1.2 [RFP] Provide and maintain temporary PRO facilities for five personnel. Provide high-speed internet access via a 10/100 RJ45 Ethernet connection for a Coast Guard provided computer network.
- 087-2.1.3 [RFP] Provide mailing and shipping addresses for the temporary PRO facilities.
- 087-2.2 [RFP] Within fourteen calendar days after contract award, the contractor shall:
- 087-2.2.1 [RFP] Provide and maintain temporary PRO facilities for ten personnel.
- 087-2.2.2 [RFP] Provide mailing and shipping addresses for the PRO facilities identified in Section 087-1.

087-3 [RFP] PRO Facilities

- 087-3.1 [RFP] General Requirements. Within thirty calendar days after contract award, provide and maintain the following permanent PRO facilities.
- 087-3.1.1 [RFP] Electric power shall be installed in accordance with NFPA 70.
 - 087-3.1.2 [A014] All data/phone drops shall be run to a RJ-45 patch panel located in the telecommunications closet identified in Section 087-3.14.3. Cabling shall be a minimum of Category 5e (speed rated at 100 Mbps) and installed in accordance with BICSI Standards.
 - 087-3.1.3 [RFP] Carpeting, where required, shall be new.
 - 087-3.1.4 [RFP] Equipment and amenities shall be new or cleaned and refurbished to like-new condition.
 - 087-3.1.5 [RFP] Permanent walls shall be freshly painted prior to occupancy or have wall coverings such as paneling or wallpaper.
 - 087-3.1.6 [RFP] All spaces shall have sufficient overhead lighting for the intended use.
 - 087-3.1.7 [RFP] All spaces shall meet [NFPA 101](#) requirements specifically regarding fire safety including: smoke detectors, portable fire extinguishers, egress, and emergency lighting.
 - 087-3.1.8 [RFP] Heating and air conditioning systems shall maintain an environmental temperature of 72°F throughout all four seasons.
 - 087-3.1.9 [RFP] Environmental controls shall be in place to ensure acceptable indoor air quality in accordance with [ANSI/ASHRAE 62.1](#) "Ventilation for Acceptable Indoor Air Quality", and Addenda Supplement to ANSI/ASHRAE 62.1.
 - 087-3.1.10 [RFP] All exterior doors shall be provided with floor mats on the exterior and interior of the door.
 - 087-3.1.11 [RFP] Individual Workspaces. Except as modified elsewhere, individual work spaces shall be furnished with the following amenities for each person assigned to the PRO:
 - 087-3.1.11.1 [RFP] Office grade carpeting.
 - 087-3.1.11.2 [A014] One data/phone connection to the telecommunications closet identified in Section 087-3.14.3, with four RJ-45 jacks wired in accordance with the [EIA/TIA 568B](#) Standard. One jack shall be used to provide telephone service.
 - 087-3.1.11.3 [RFP] One telephone with speaker function hands free dialing capability.
 - 087-3.1.11.4 [RFP] A private answering machine or pass-code protected voice mail system, enabled to allow message to be recorded and retrieved from off premises.
 - 087-3.1.11.5 [RFP] Sufficient 110-120V electric power to support all contractor-provided equipment and individual outlets for Coast Guard provided computer, monitor, speaker system, and two additional office appliances.
 - 087-3.1.11.6 [RFP] One desk light.
 - 087-3.1.11.7 [RFP] 12 linear feet by 3 feet deep of desktop or horizontal writing surface.

- 087-3.1.11.8 [RFP] Two chairs, one high back, height adjustable, swivel/tilt seat, adjustable arms, lumbar and lateral back support, rolling carpet casters, high resilience molded soft foam seat and back, the other appropriate for short-term visitors.
- 087-3.1.11.9 [RFP] One battery powered wall clock within line-of-site.
- 087-3.1.11.10 [RFP] 10 linear feet of lockable cabinet space
- 087-3.1.11.11 [RFP] 20 linear feet of shelving approximately 14 inches deep.
- 087-3.1.11.12 [RFP] A pen/pencil drawer
- 087-3.1.11.13 [RFP] One lockable legal size hanging file drawer
- 087-3.1.11.14 [RFP] Two lockable drawers.
- 087-3.1.11.15 [RFP] One waste basket.
- 087-3.1.11.16 [RFP] One paper recycling container.
- 087-3.1.11.17 [RFP] One locker/wardrobe cabinet large enough to appropriately store a full length coat, boots, hard hat, safety goggles, and a change of clothes.
- 087-3.1.11.18 [RFP] Space for a wall-mounted external name placard approximately 11 inches by 2.5 inches.
- 087-3.2 [RFP] Reception Area. Provide a reception area at the main entrance to the PRO facilities. The main entrance to the PRO facilities must be accessible from the visitor parking area without requiring visitors to wear hard hat or eye protection. Provide two individual work spaces for PRO personnel. Provide a waiting area with sitting space for four, a coffee table, a coat rack that can accommodate four coats, and adequate storage facilities for four hard hats and four sets of eye protection.
- 087-3.3 [RFP] Private Offices. Provide three private offices in proximity to the reception area, one each for the Commanding Officer (CO), Executive Officer (XO), and Administrative Contracting Officer (ACO). Each office shall be a minimum of 150 square-feet and contain, in lieu of the desktop or horizontal writing surface (087-3.1.11.7), pen/pencil drawer (087-3.1.11.12), lockable hanging file drawer (087-3.1.11.13), two lockable drawers (087-3.1.11.14), and shelf space (087-3.1.11.11) required above, a wood veneer double pedestal desk equipped with a center pencil/pen drawer, three general supply drawers, two 24 inch file drawers, and cable grommet; a matching corner desk, approximately 30 inch (w) x 30 inch (d) x 29.5 inch (h), with cable grommet; and a matching five-shelf bookcase, approximately 4 feet wide. In addition to the requirements of 087-3.1.11, provide:
- 087-3.3.1 [RFP] A round, center-pedestal meeting table suitable for four people, with four matching chairs.
- 087-3.3.2 [RFP] For the CO, a drafting table and stool.
- 087-3.3.3 [RFP] For the ACO and XO, two file cabinets each. File cabinets shall be fire retardant five-drawer letter-size vertical filing cabinets with compression follower.
- 087-3.4 [RFP] Provide four private offices, one each for an Admin, Technical, and Logistics department head and one for a Contract Specialist. Each office shall be a minimum of 100 square-feet.

- 087-3.5 [RFP] Common Offices. Provide the remaining individual work spaces using semi-private systems furniture, or equivalent, organized around or in close proximity to the Common Workspace. Individual work spaces shall be approximately 100 square feet.
- 087-3.6 [RFP] Common Workspace. Provide the following equipment in a common workspace:
- 087-3.6.1 [RFP] Four drafting tables and stools.
 - 087-3.6.2 [RFP] Eight five-shelf bookcases approximately 4 feet wide by 14 inches deep.
 - 087-3.6.3 [RFP] Ten 42 inch (w) x 18 inch (d) five-drawer lateral filing cabinets.
 - 087-3.6.4 [RFP] Five hanging blueprint file cabinets, approximately 63 inch (w) x 18 inch (d) x 50 inch (h), front opening, capable of hanging two side by side sets of full size drawings.
 - 087-3.6.5 [RFP] A battery powered wall clock approximately 12 inches in diameter.
 - 087-3.6.6 [RFP] Four data/phone drops and electrical outlets to be located throughout the office to accommodate Coast Guard provided printers and fax machines.
- 087-3.7 [RFP] Sanitary Facilities. Provide male head and locker room facilities. At a minimum, provide:
- 087-3.7.1 [RFP] Two urinals.
 - 087-3.7.2 [RFP] Two toilets in private enclosures with a door, and two toilet tissue dispensers.
 - 087-3.7.3 [RFP] Three sinks, each with hot with cold running water, a mirror, hand soap, and paper hand towels.
 - 087-3.7.4 [RFP] A segregated locker room area adjacent and connected to the head facility. At a minimum, provide three showers, each with a private enclosure with a door, and hot and cold running water. Provide a changing area equipped with ten vertical lockers approximately 15 inch (w) x 18 inch (d) x 72 inch (h), and accompanying bench seat(s).
 - 087-3.7.5 [RFP] One garbage can in the head and one in the locker room.
 - 087-3.7.6 [RFP] Provide female head and locker room facilities. At a minimum, provide:
 - 087-3.7.6.1 [RFP] Two toilets in private enclosures with a door, and two toilet tissue dispensers.
 - 087-3.7.6.2 [RFP] Two sinks, each with hot with cold running water, a mirror, hand soap, and paper hand towels.
 - 087-3.7.6.3 [RFP] A segregated locker room area adjacent and connected to the head facility. At a minimum, provide one shower, with a private enclosure with a door, and hot and cold running water. Provide a changing area equipped with five vertical lockers approximately 15 inch (w) x 18 inch (d) x 72 inch (h), and accompanying bench seat(s).
 - 087-3.7.6.4 [RFP] One garbage can in the head and one in the locker room.

- 087-3.7.7 [RFP] Provide a unisex head facility near the reception area. At a minimum, provide a toilet with two toilet tissue dispensers, a sink with hot with cold running water, a mirror, hand soap, paper hand towels, and a garbage can.
- 087-3.8 [RFP] Galley and Mess Hall. Provide a kitchenette area with a minimum of 100 square feet that includes:
- 087-3.8.1 [RFP] Eighteen square feet of countertop with base cabinets underneath and hanging cabinets above.
 - 087-3.8.2 [RFP] One stainless steel deep sink with hot and cold running water.
 - 087-3.8.3 [RFP] Two thirty cubic foot residential quality refrigerators/freezers with ice makers.
 - 087-3.8.4 [RFP] One microwave.
 - 087-3.8.5 [RFP] One coffee maker with 2 warming plates and hot water dispensers.
 - 087-3.8.6 [RFP] Electrical outlets for four additional kitchen appliances.
 - 087-3.8.7 [RFP] One seated dining area for ten persons.
- 087-3.9 [RFP] Reproduction Facility. Provide a reproduction room with a minimum of 150 square feet that includes:
- 087-3.9.1 [RFP] One plain paper color document copier with twenty-sort capability, automatic feed, image sizing, and network interface card, rated to reproduce fifty pages per minute and 40,000 pages per month. The copier shall be capable of scanning and out putting in letter, legal and 11X17 inch sizes without manually changing paper trays.
 - 087-3.9.2 [RFP] One plain paper color document copier with twenty-sort capability, automatic feed, image sizing, and network interface card, rated to reproduce fifty pages per minute and 20,000 pages per month, located in the reception area. The copier shall be capable of scanning and out putting in letter and legal paper sizes without manually changing paper trays.
 - 087-3.9.3 [RFP] Two plain paper, laser quality facsimile (FAX) machines with a minimum of 33.6 kbps modem, 20 page automatic document feeder, 160 page memory, 3 second per page scan rate, auto redial, and 150 sheet paper supply (one located in reception area).
 - 087-3.9.4 [RFP] Space and electric outlets sufficient for a Government-provided full size drawing plotter, approximately 60 inches wide by 18 inches deep by 48 inches tall.
 - 087-3.9.5 [RFP] Table space and electric outlets sufficient for a Government-provided color laser printer.
 - 087-3.9.6 [RFP] Space and electric outlets sufficient for a Government-provided computer workstation with a monitor, speakers, and digital scanner.
 - 087-3.9.7 [A014] Three data/phone line drops with four RJ-45 jacks each, wired to the telecommunications closet identified in Section 087-3.14.3, in accordance with the [EIA/TIA 568B](#) Standard. Two jacks shall be utilized to provide telephone service to the FAX machines.
 - 087-3.9.8 [RFP] One cross cut paper shredder machine, with auto start/stop via photo cell, start/stop/reverse modes, a fully enclosed cabinet, and rated for 27 ft/min with 30 sheet capacity.

- 087-3.9.9 [RFP] One drawing cutting / document sorting table approximately 36 inches deep by 72 inches wide by 29.5 inches high.
- 087-3.9.10 [RFP] Sufficient supply locker or shelf space to accommodate a ready change of copy machine supplies, plotter supplies, FAX machine supplies, four 10-ream cases of copier paper, and four 42 inch rolls of paper.
- 087-3.9.11 [RFP] One mail supply locker approximately 42 inches wide by 12 inches deep by 60 inches high.
- 087-3.9.12 [RFP] One mail sorting table approximately 42 inch (w) x 42 inch (l) x 29.5 inch (h).
- 087-3.9.13 [RFP] One large paper recycling collection bin.
- 087-3.10 [RFP] Conference Rooms
- 087-3.10.1 [RFP] Master Conference Room. Provide one approximately 400 square foot private conference room with the following amenities:
- 087-3.10.1.1 [RFP] One wood veneer executive conference table sized to comfortable seat fourteen persons, with fourteen office chairs, high back, height adjustable, swivel/tilt seat, adjustable arms, lumbar and lateral back support, rolling carpet casters, high resilience molded soft foam seat and back.
- 087-3.10.1.2 [RFP] Twelve additional chairs located along the walls outside the table. Chairs should match style of table chairs but need not be adjustable or have rolling casters.
- 087-3.10.1.3 [RFP] One approximately 6 foot wide drop down projection screen.
- 087-3.10.1.4 [RFP] One approximately 6 foot wide wall-mounted dry erase board.
- 087-3.10.1.5 [RFP] A wood veneer presentation podium.
- 087-3.10.1.6 [RFP] One overhead mounting system for a Government-provided digital projector.
- 087-3.10.1.7 [RFP] A wood veneer desk with space and electric outlets sufficient for a Government-provided computer workstation with a monitor, speakers, and overhead projector. Provide an appropriate conduit for data, phone, and power cables between the computer and the overhead projector mounting.
- 087-3.10.1.8 [RFP] Space and electric outlets in the vicinity of the desk for a Government-provided portable audio/visual equipment cart containing a television, a VCR, a DVD player, and a camcorder.
- 087-3.10.1.9 [RFP] Eight double electric outlets located under the table.
- 087-3.10.1.10 [A014] One data/phone line drop, in the vicinity of the desk, with four RJ-45 jacks each, wired to the telecommunications closet identified in Section 087-3.14.3, in accordance with the EIA/TIA 568A Standard. One jack shall be utilized to provide telephone service to the speakerphone.
- 087-3.10.1.11 [RFP] One cable television connection, in the vicinity of the desk.
- 087-3.10.1.12 [RFP] One battery powered wall clock approximately 12 inches in diameter.

- 087-3.11 [RFP] Team Meeting Rooms. Provide two approximately 100 square foot private team meeting rooms, each with a wall-mounted dry erase board and a table and chairs to accommodate four people.
- 087-3.12 [RFP] File Room. Provide one approximately 150 square foot lockable file room with a minimum of 1200 cubic feet high density mobile file management system that contains a combination of shelf units and file drawers capable of storing letter and legal size documents, books and binders.
- 087-3.13 [RFP] Parking.
- 087-3.13.1 [RFP] Provide seven marked parking spaces within the immediate vicinity of the main entrance to the PRO facilities. Mark three for PRO Visitor and one each for the PRO Commanding Officer, PRO Executive Officer, PRO Contracting Officer, and PRO Government Vehicle
- 087-3.13.2 [RFP] Provide twenty five additional parking spaces for government use located within a short walking distance of the PRO facilities.
- 087-3.14 [A014] Locked Storage
- 087-3.14.1 [A014] Lay-down Area. Provide climate controlled 3.05m x 4.88m (10 ft x 16 ft) storage shed, with access ramp, near an entrance to the PRO facilities, preferably not the main entrance, for Government shipping, receiving and storage of materials and supplies.
- 087-3.14.2 [A014] Storage Area. A fenced-in, climate controlled, locked area of 93m² (1,000 ft²) shall be provided for PRO storage. A fenced-in, locked area of 232m² (2,500 ft²) shall be provided for PCAF storage. These storage areas shall be accessible by forklift. Government personnel shall have unimpeded access to these spaces 24 hours per day, 7 days per week.
- 087-3.14.3 [A014] Telecommunications Closet. The contractor shall provide a space within the PRO facilities to serve as a central telecommunications hub for all data and telephone lines. This space shall be a minimum of 4.65m² (50 ft²) and be appropriately sized and powered to support all contractor-supplied and Coast Guard provided equipment. The space must have ventilation or air conditioning to ensure an environmental temperature of 21°C (70°F) with all equipment running, in all seasons. In addition, provide the following:
- 087-3.14.3.1 [A014] An appropriate connection from the telecommunications closet to the point of demarcation of the Coast Guard furnished commercial T1 line.
- 087-3.14.3.2 [A014] Termination blocks for contractor-provided telephone service.
- 087-3.14.3.3 [A014] Rack-mounted RJ-45 patch panels for all data/phone drops installed in the PRO facilities.
- 087-3.14.3.4 [A014] Patch cables connecting the contractor-provide telephone service termination blocks to the RJ-45 patch panels for all phone service.
- 087-3.14.3.5 [A014] Two full height 19-in electronics racks with space and electrical outlets to accommodate Government-provided modems, routers, switches, hubs, servers, and peripheral equipment necessary to support approximately thirty computer workstations.
- 087-3.15 [RFP] Services. Provide the following services for the duration of the performance period.

- 087-3.15.1 [RFP] Security. Physical security of the facility on which the PRO facilities are located, including the presence of a watch attendant 24 hours per day, 7 days per week. Issue security badge for PRO staff and visitors, as necessary. Issue and manage keys to PRO facilities.
- 087-3.15.2 [RFP] Telephone. All contractor provided telephone lines shall be direct dial, independent, private lines. The contractor may route direct dial calls through the contractor's switchboard. All calls to and from the PRO facility shall be accessible twenty-four hours per day. Long distance calls shall be billed to and paid for by the Government. Provide an electronic Station Message Detail Recording (SMDR) in accordance with [CDRL 087-001](#).
- 087-3.15.3 [RFP] Cable Television. Service for local, national, and headline news and weather.
- 087-3.15.4 [RFP] Electric Service.
- 087-3.15.4.1 [RFP] Automatic back up generator, with auto transfer switching feature that will allow uninterrupted electrical power in the event of utility failure in any of the onsite Coast Guard facilities.
- 087-3.15.5 [RFP] Housekeeping. At a minimum, provide the following housekeeping services. Coordinate with the PRO for access to the facilities.
- 087-3.15.5.1 [RFP] Daily trash removal.
- 087-3.15.5.2 [RFP] Daily cleaning of all head and locker room facilities, including restocking supplies such as soap, paper towels, and toilet tissue.
- 087-3.15.5.3 [RFP] Daily vacuuming and sweeping of all floors.
- 087-3.15.5.4 [RFP] Daily cleaning of showers and enclosures.
- 087-3.15.5.5 [RFP] Weekly collection of recycled paper.
- 087-3.15.5.6 [RFP] Monthly waxing and polishing of non-carpeted floors.
- 087-3.15.5.7 [RFP] Semiannual cleaning of carpeted floors.
- 087-3.15.6 [RFP] Snow removal, as necessary, from walkways and parking areas.
- 087-3.15.7 [RFP] Shipping/receiving. Receive, sort, and store all Coast Guard mail, packages, and shipments until collected by a Coast Guard PRO representative. Provide forklift service to transport large packages to the PRO facilities. Provide, during working hours 5 additional hours of forklift service per month for Coast Guard use.
- 087-3.15.8 [RFP] Maintenance. Maintain and service all contractor-provided spaces and equipment, including copy machine and facsimile machine maintenance and toner cartridge renewals. Provide a program for PRO personnel to report and follow up on needed maintenance. Unscheduled copy machine and facsimile machine repairs shall be initiated within four hours of contractor notification.
- 087-3.16 [RFP] Inspection. The contractor shall periodically conduct jointly with the Coast Guard a material inspection of the PRO facilities to afford the contractor, as landlord, an opportunity to ensure the Coast Guard is being a good steward of the facilities, and to review and identify any maintenance discrepancies that need attention. The first inspection shall take place within seven days of the date the Coast Guard occupies the non-temporary facilities. Subsequent inspections shall

occur at the request of either the contractor or the Coast Guard, but not more frequently than monthly or less frequently than annually. Discrepancies found during these inspections shall be corrected within 14 days.

087-4 [RFP] Primary Crew Assembly Facility (PCAF)

- 087-4.1 [A014] The contractor shall provide identical space, equipment and service as provided for the PRO facilities in above paragraphs and subparagraphs of Sections 087-1 and 087-3. The PCAF shall be ready for full operation and staffing one year before delivery of the first FRC-B and continue throughout the life of the FRC-B contract.

SECTION 088. [RFP] HUMAN FACTORS ENGINEERING**088-1 [RFP] General Design**

- 088-1.1 [A002] A Human Factors Engineering (HFE) Program Plan ([CDRL 088-001](#)) shall be provided. The tailored HFE Program Plan shall be developed in accordance with [ASTM F1337](#).
- 088-1.2 [RFP] The FRC-B design shall provide operational and maintenance workplaces, equipment, controls, and displays in accordance with [ASTM F1166](#), the [ABS Guide for Crew Habitability on Ships](#), and [OPNAVINST 9640.1A](#).
- 088-1.2.1 [A009] The FRC-B shall be designed to meet the requirements of the ABS HAB notation; however HAB notation is not required as part of classification for the FRC-B.
- 088-1.3 [RFP] The FRC-B shall provide systems and equipment sufficiently durable to operate and maintain under the conditions for which it was designed or procured and reliable, thereby maximizing the availability to the users.
- 088-1.4 [RFP] The FRC-B design shall reflect appropriate function allocations to equipment or personnel so as to achieve reliable system performance with the needed sensitivity, precision, time, and safety at minimum cost and with the minimum level skills required to maintain and operate the system.
- 088-1.5 [RFP] The FRC-B shall be designed for simplicity. The system or equipment design shall be consistent with the desired human-machine system functions, and compatible with the expected maintenance and operational concepts.
- 088-1.6 [RFP] The FRC-B design shall ensure that training requirements are minimized by use of human performance data gathered for trade studies of systems, equipment sets etc. Systems and equipment shall be capable of being maintained, operated, and repaired in the planned operational and maintenance environment with minimal training with evidence of avoiding new training requirements during equipment development/selection. Systems and equipment shall be designed/selected using personnel and training requirements as a discriminator within the limits of time, cost, and performance trade-offs.
- 088-1.7 [RFP] The FRC-B systems and equipment shall be capable of being maintained, operated, and repaired in the planned operational and maintenance environment with provided training.
- 088-1.8 [RFP] Systems and equipment shall be designed to be consistent, appearing, behaving, and responding the same throughout. The FRC design shall provide uniform controls, displays, marking, coding, labeling, and arrangement. Controls, displays, marking, coding, labeling, and arrangement schemes shall be uniform for common functions of all equipment.
- 088-1.9 [RFP] The FRC-B design shall reflect a user-centered perspective which involves focusing on the needs and requirements of the end user throughout the design, acquisition, or development process. The FRC-B systems and equipment shall be designed to meet specific user requirements, providing the functionality to meet those requirements.
- 088-1.10 [A010] The FRC-B design of systems, equipment, and facilities shall conform to the capabilities and limitations of the users to operate and maintain it in its operational environment and not exceed user capabilities. The term "user

capabilities” is in reference to BOTH the hours available and capabilities as a summation of Knowledge, Skills, and Abilities post FRC-B training. The maximum workday for ship's company is 12 hours a day and the maximum work hours per week of 80 hours.

- 088-1.11 [RFP] The FRC-B design shall maximize human performance by conducting trade study analysis based on human performance data for areas considered important based on critical task analysis.
- 088-1.12 [RFP] Systems and equipment shall be designed to foster effective procedures, work patterns, and personnel safety and health and minimize factors that degrade human performance which may be in terms of reducing critical tasks or time to complete tasks based on like systems.
- 088-1.13 [RFP] The FRC-B systems and equipment shall be, at minimum, designed for personnel from the 5th through the 95th percentile levels of the human physical characteristics in order to represent the user population.
- 088-1.14 [RFP] The FRC-B shall use common and class standard equipment, such as electronics, engines, weapon systems, hardware/software. Other common equipment shall be used whenever possible to reduce training costs and time, increase workforce availability and on-the-job training (OJT), increase operational readiness/effectiveness, and reduce parts inventories. Comparison to legacy assets will be used in determining reductions and increases.
 - 088-1.14.1 [RFP] The following references shall be used when developing data for personnel requirements.
 - 088-1.14.1.1 [RFP] Department of the Navy Ship Manpower Document/Squadron Manpower Document Development and Review Procedures
 - 088-1.14.1.2 [RFP] U. S. Coast Guard Regulations, [COMDTINST M5000.3B](#)
 - 088-1.14.1.3 [RFP] Coast Guard Staffing Standards Manual, [COMDTINST M5312.11A](#)
 - 088-1.14.1.4 [RFP] Coast Guard Enlisted Performance Qualifications Manual, [COMDTINST M1414.8C](#)
 - 088-1.14.1.5 [A014] Coast Guard Cutter Training and Qualifications Manual, [COMDTINST M3502.4I](#)
 - 088-1.14.1.6 [A014] U.S. Coast Guard Competency Management System Manual, [COMDTINST M5300.2](#)

088-2 [RFP] Communications

- 088-2.1 [RFP] The FRC-B design shall provide the means for required physical, visual, and auditory communication links among personnel, and between personnel and their equipment, under both normal and emergency situations in accordance with [ASTM F1166](#).

088-3 [RFP] Accessibility

- 088-3.1 [RFP] The FRC-B shall provide space for personnel, their equipment, and free volume for the movements and activities they are required to perform during operation and maintenance tasks under both normal and emergency conditions in accordance with [ASTM F1166](#).

088-4 [RFP] Maintainability

- 088-4.1 [RFP] FRC-B design shall ensure that systems are easy to maintain. Ease of maintenance includes physical access with required tools, ease of removal and replacement of parts, visual access if required. Systems and equipment shall be designed so that they can be maintained in the least amount of time, at the lowest cost, and with a minimum effort and expenditure of support resources assessed during drawing reviews for access and verified during T&E activities. Systems and equipment shall be designed to require only common hand tools for maintenance unless specialized tools provide a significant advantage over common hand tools or where required by security considerations.

088-5 [RFP] Controls, Displays and Alarms

- 088-5.1 [RFP] Design of controls, displays, alarms and the integration therein shall comply with [ASTM F1166](#). The FRC-B shall provide for context sensitive alerts in the mode (visual, auditory, tactical) consistent with the conditions upon which it will be displayed as specified in ASTM F1166. The FRC-B shall provide mechanisms to level operator workload and to ensure tasking can be completed without overload or underload on any individual watchstander. The FRC-B shall utilize uniform control, display, marking, coding, labeling, and layout designs for common functions of all subsystems as well as common display formats, symbology, operating procedures, and interaction modes.

088-6 [RFP] Error-Tolerant Design

- 088-6.1 [RFP] The design of FRC-B systems shall provide features to prevent and mitigate the effects of human error.

088-7 [RFP] Workstation Design

- 088-7.1 [RFP] The FRC-B shall provide workstation controls, displays and alarms, human-computer interfaces, workspaces and consoles in accordance with [ASTM F1166](#).

088-8 [RFP] Labeling

- 088-8.1 [RFP] The configuration, size and location of labeling shall be provided in accordance with this COR and [ASTM F1166](#).

SECTION 089. [RFP] PERSONNEL AND TRAINING**089-1 [RFP] General Requirements**

- 089-1.1 [RFP] This section describes the requirements for developing staffing levels and training support. It identifies specific information and material requirements to be furnished by the Contractor for accomplishment of personnel and training requirements. This section also applies to training requirements for shore support personnel who will support the FRC-B once delivered.
- 089-1.2 [RFP] FRC-B staffing and training shall be based upon a 22 member crew, operational requirements, maintenance philosophy and requirements, and unit support requirements. The billet and rating profiles for the crew is provided below in Table 89-1.

Table 89-1

FRC BILLET STRUCTURE			
1.	0-3 (CO)	12.	BM3
2.	0-2 (XO)	13.	SN
3.	BMC	14.	SN
4.	BM1	15.	SN
5.	BM2	16.	MKC or EMC
6.	FS2	17.	MK1
7.	OS2	18.	EM1
8.	IT2	19.	MK2
9.	GM2	20.	MK3
10.	BM3	21.	EM3
11.	BM3	22.	FN

- 089-1.3 [A010] All training shall be developed and delivered based on the Instructional Systems Design (ISD) process as described in the [STANDARD OPERATING PROCEDURES \(SOP\) FOR THE COAST GUARD'S TRAINING SYSTEM](#) and COMDTINSTs as listed in Table 89-2. The ISD methodology uses Front-End Analysis, and Job and Task Analysis (JTA) to identify, analyze, design, develop, implement, and evaluate training. It is intended that this analysis identify and develop the training required for pre-commissioning crews, shore support personnel and follow on Coast Guard school house training. It is not the Government's intent to have well established factory training courses redeveloped solely to meet the ISD process. It is the Government's intent that the Contractor's front end analysis is completed to ensure that all learning objectives are fulfilled by the factory training (COT's or newly developed). Any new courses developed to support the FRC are required to be developed using the ISD process.

Table 89-2

Reference	Title
a COMDTINST 1500.23	U.S. Coast Guard Philosophy on Training, Education, and Development
b COMDTINST 1550.23	Training Evaluation Policy
c COMDTINST 1554.1	Development and Management of Interactive Courseware (ICW) for Coast Guard Training
d COMDTINST 7302.2	Class 'C' School Funding Process
e COMDTINST M3502.4	Cutter Training and Qualification Manual
f USCG (CG-132) SOP Vol I	Introduction to the Coast Guard Training System Standard Operating Procedures
g USCG (CG-132) SOP Vol II	Analysis
h USCG (CG-132) SOP Vol III	Evaluation
i USCG (CG-132) SOP Vol IV	Job Aids
j USCG (CG-132) SOP Vol VI	Curriculum Outline
k USCG (CG-132) SOP Vol VII	E-Learning
l USCG (CG-132) SOP Vol VIII	Non-Instructional Interventions

089-2 [RFP] Definitions

- 089-2.1 [RFP] Training – Providing necessary knowledge and skill to people in order that they may perform a task.
- 089-2.2 [RFP] Performance-based Training – That training which imparts the appropriate skills and knowledge required to accomplish a task given specific conditions and standards.
- 089-2.3 [RFP] Familiarization Training – Training provided to crews to familiarize them with the principles of design and the basic operation of the FRC-B and all its systems.
- 089-2.4 [RFP] Factory Training – Training provided by the vendor or manufacturer of the equipment or systems.

089-3 [RFP] Training Requirements

- 089-3.1 [RFP] Training Development
- 089-3.1.1 [RFP] Training Development and Support Plan (TDSP) – A Training Development and Support Plan (TDSP) shall be prepared in accordance with [CDRL 089-001](#). The TDSP shall define the participant roles, interfaces, and responsibilities expected of both Coast Guard and Contractor as training development proceeds in accordance with Table 89-2.
- 089-3.1.2 [RFP] A Training Plan shall be prepared for performance-based familiarization training and factory training in accordance with COR Section 089-4 and 089-5. This plan shall describe the Contractor's approach to the development of the curricula, training aids, and training materials; procurement of the training equipment; ILS for training equipment; procurement of factory training; and conduct of training sessions.

- 089-3.2 [RFP] Develop a Training Schedule ([CDRL 089-001](#)) to be implemented during the pre-commissioning period and transition into the operational phase for the areas of operations, maintenance, and support for the FRC-B.
- 089-3.3 [RFP] Provide a complete list of all required training for the crew and maintenance support personnel in accordance with USCG (CG-132) SOP Vol II [CDRL 089-001](#). This Master Training List (MTL) shall include courses provided by the government and commercial vendors.
- 089-3.4 [RFP] Identify and utilize embedded training capability built into ship's equipment/systems. If embedded systems are available from vendors/sub-vendors ensure they are purchased with the equipment/system.
- 089-3.5 [RFP] Job and Task Analysis (JTA) – A job-task analysis (JTA) shall be conducted for all FRC-B crew members in accordance with USCG (CG-132) SOP Vol II and [CDRL 089-002](#). It shall include all tasks required to be performed by crew members for all systems, subsystems, and equipments to execute the missions of the FRC-B.
- 089-3.6 [RFP] Training analysis shall also include any E-learning requirements in accordance with USCG (CG-132) SOP Vol VII and any Non-Instructional Interventions in accordance USCG (CG-132) SOP Vol VIII and documented in [CDRL 089-002](#).
- 089-3.7 [RFP] Training shall be developed and delivered on all job tasks related to FRC-B system operation, maintenance (Organizational-level), troubleshooting, and repair.
- 089-3.8 [RFP] For those FRC-B training requirements which the necessary or preferred delivery method is OJT, design and develop a formal OJT program and provide appropriate job aids.
- 089-3.9 [RFP] Training shall consist of a mixture of standup or lecture style training, hands-on training, computer based training/interactive multimedia instruction (CBT/IMI), simulation, web-based training, job aids, embedded training, Electronic Performance Support System (EPSS), and on-the-job training (OJT). Each training delivery method shall be analyzed and curricula designed to implement the appropriate training format.
- 089-3.10 [RFP] A comprehensive Instructional Plan shall be prepared that identifies the appropriate instructional delivery methods in accordance with [USCG \(CG-132\) SOP Volume VI \(CDRL 089-003\)](#). The Instructional Plan shall deliver a complete Curriculum Outline identifying all Terminal Performance Objectives (TPOs) and Enabling Objectives (EOs), all staffing, training equipment, facilities, compartment requirements, materials, and services required for converting the Contractor-provided training into in-house Coast Guard courses.
- 089-3.11 [RFP] Instructional Texts, Job Aids, and Training Aids – Instructional texts, job aids, and training aids covering each TPO and EO shall be delivered ([CDRL 089-003](#)). All instructional texts shall be developed using the Structured Writing format (or a Contracting Officer approved alternative) described in [USCG \(CG-132\) SOP Volume IV](#).
- 089-3.12 [RFP] Identify requirements for major training aids (including but not limited to simulators, and equipment mock-ups (weapons & engine) and computer resources. Where more cost effective over the life of the asset, recommend the

use of alternative training delivery methods, such as computer-based training and performance support tools.

- 089-3.13 [RFP] Design and develop interactive tech data/manuals in accordance with this COR SECTION 086.
- 089-3.14 [RFP] Each instructor(s) selected by the Contractor to conduct training shall be technically competent to instruct in operation and maintenance of the systems and any other equipment required for operation of the FRC-B. The Contractor shall maintain and make available satisfactory documentation and demonstration of such competence.
- 089-3.15 [RFP] Course Evaluation and Improvement.
- 089-3.15.1 [RFP] External Evaluations – An External Course Evaluation form shall be delivered for students and supervisors in accordance with [USCG \(CG-132\) SOP Vol III. \(CDRL 089-003\)](#)
- 089-3.15.2 [RFP] Internal Evaluations – An Internal Course Evaluation form shall be delivered to each student(s) immediately upon each course completion in accordance with the USCG (CG-132) SOP Volume III. Completed internal evaluations shall be delivered to the Contracting Officer. Quantitative, verifiable evidence shall be presented showing the degree to which the initial course training objectives were met, and results of the internal evaluations. Recommendations shall be provided for improving the initial training program, including deficiencies in instructional strategies in the next Training Progress Report.
- 089-3.16 [RFP] Safety.
- 089-3.16.1 [RFP] Procedures to assure the safety of all participants during training that may involve hazardous operations shall be established. Safety procedures shall include relevant notices, cautions, notes, and warnings extracted from preliminary publications, handbooks, or other sources of information pertinent to the operation and maintenance of the equipment. All safety information shall be covered in detail in the appropriate lesson plan, in accordance with USCG (CG-132) SOP Vol VI.

089-4 [RFP] Familiarization Training

- 089-4.1 [RFP] A pre-commissioning familiarization (FAM) training program shall be prepared, scheduled, and conducted for the FRC-B's equipment and systems, to a maximum of 32 personnel per FRC-B. Crew familiarization training shall be a minimum of 8 weeks.
- 089-4.2 [RFP] Familiarization training shall be performance-based and performance-tested on working equipment.
- 089-4.3 [RFP] An outline of proposed familiarization courses shall be prepared and provided to include subject, content, and time allocations. This shall be incorporated in the Training Plan ([CDRL 089-001](#)).

089-5 [RFP] Factory Training

- 089-5.1 [RFP] Additional comprehensive pre-commissioning factory training shall be provided on the following systems and equipment: propulsion system (including control system), main engines, reduction gears, ship's electrical generating system, generator engines, ship control console, steering system, C4ISR systems, and NTNO systems to a maximum of 15 personnel per FRC-B.

- 089-5.2 [A010] All factory training courses will be a minimum of 40 hours with the exception of the main engines shall be a minimum of 80 hours. Factory training for each lead FRC-B crew shall be completed prior to commencement of any Familiarization training.
- 089-5.3 [RFP] Training shall cover all Operational level aspects of equipment maintenance, troubleshooting, and operation and shall be conducted at the Contractor's or subcontractor's facility as appropriate. Equipment specific training shall be conducted by a factory authorized training representative. The Training and Instructional Plans shall detail the total number of proposed course hours for the main equipment systems aboard the FRC-B. Training materials shall include the Cutter Information Book (CIB), system/equipment manuals, and vendor-prepared factory training course materials.
- 089-5.4 [RFP] A factory training curriculum shall be prepared and provided as part of [CDRL 089-003](#). It shall include training materials, videos, textbooks, hand-outs, and documentation. Training materials, textbooks, aids, videos and documentation shall become government property at the end of the training.

089-6 [RFP] Additional Training Requirements

- 089-6.1 [RFP] The training described in this section shall be in addition to the other training required elsewhere in these requirements and in accordance with the requirements and conditions contained herein.
- 089-6.2 [RFP] Definitions.
- 089-6.2.1 [RFP] Dockside Familiarization Training – Crew hands-on performance based training, provided dockside, to familiarize the entire FRC-B crew with shipboard engineering, emergency and other systems. This training shall be provided by qualified contractor personnel. The contractor provided instructor shall demonstrate step-by-step the operation of the system in question, immediately followed by a time period to allow all FRC-B crew members to reenact and perform the identical sequence of tasks, and ask questions.
- 089-6.2.2 [RFP] Formal Organized Underway Training – Crew hands-on performance based training, provided underway, to familiarize the entire FRC-B crew with shipboard navigation, engineering, C4ISR, emergency and other systems. This training shall be provided by qualified contractor personnel. The contractor provided instructor shall demonstrate step-by-step the operation of the system in question, immediately followed by a time period to allow the designated FRC-B crew members to reenact and perform the identical sequence of tasks, and ask questions.
- 089-6.2.3 [RFP] Post Delivery Formal Organized Underway Training – Crew hands-on performance based training, provided underway, to familiarize the entire FRC-B crew with shipboard navigation, integrated bridge equipment, and C4ISR systems. This training shall be provided by qualified contractor personnel. The contractor provided instructor shall demonstrate step-by-step the operation of the system in question, immediately followed by a time period to allow the designated FRC-B crew members to reenact and perform the identical sequence of tasks, and ask questions.
- 089-6.3 [RFP] Training Curriculum Requirements and Training Equipment.
- 089-6.3.1 [RFP] The Contractor shall prepare a Training Curriculum Guide for all types of training defined in this COR Section ([CDRL 089-003](#)). The Curriculum

Guide, as a minimum, shall include a list of training topics for each category of training (i.e. Dockside Familiarization and Underway Training) as well as the procedures or steps needed to perform each of the topics.

- 089-6.3.2 [RFP] The equipment used for the training shall be that which is installed and operating aboard the FRC-B.
- 089-6.4 [RFP] Scope and Magnitude of Additional Training Requirements.
- 089-6.4.1 [RFP] Dockside Familiarization Training – A minimum of 32 hours shall be provided for Dockside Familiarization Training for the lead ship and all follow-on vessels. Dockside Familiarization Training topics shall provide familiarization training for all crew members on the light-off of main engines and generators, manual and auto paralleling of shipboard generators, emergency lighting and power circuitry, fuel transferring and refueling of the FRC-B and Cutter Boat, operation of the FRC-B steering and emergency systems, normal and emergency operation of the Cutter Boat launch and recovery system, operation and use of installed Fire Pumps and P-100 portable pump, as a minimum.
- 089-6.4.2 [RFP] Formal Organized Underway Training – A minimum of 16 hours shall be provided for Formal Organized Underway Training in unrestricted waters for the lead ship and all follow-on vessels. Formal Organized Underway Training topics shall include but are not limited to ship handling familiarization exercises, Cutter Boat launch and recovery, anchoring, use and familiarization of shipboard navigation electronic systems, emergencies including loss of power and steering casualties, and other underway topics for training as determined jointly between the contractor and the Contracting Officer.
- 089-6.4.3 [RFP] Post Delivery Formal Organized Underway Training – A minimum of 8 hours of Post Delivery Formal Organized Underway Training shall be provided. Post Delivery Formal Organized Underway Training topics shall include but are not limited to the following:
- 089-6.4.3.1 [RFP] RADAR Overlay;
 - 089-6.4.3.2 [RFP] ECINS Route Planning;
 - 089-6.4.3.3 [RFP] Search Planning;
 - 089-6.4.3.4 [RFP] Autopilot Tracking of Planned routes;
 - 089-6.4.3.5 [RFP] Use of Autopilot to Track and Search Patterns or Patrol Routes;
 - 089-6.4.3.6 [RFP] Use of Autopilot with ECINS during Heavy Weather Operations;
 - 089-6.4.3.7 [RFP] Proper Set-up of Autopilot during Various Weather Conditions;
 - 089-6.4.3.8 [RFP] Use of ECINS during Failure Modes of Integrated Systems;
 - 089-6.4.3.9 [RFP] Updating of ECINS Charts;
 - 089-6.4.3.10 [RFP] Manual ECINS Chart Corrections; and
 - 089-6.4.3.11 [RFP] Other Topics Related to Integrated Bridge/ECINS as determined jointly between the contractor and the Contracting Officer.
- 089-6.5 [RFP] Timing of Training.

- 089-6.5.1 [RFP] The training described in this COR Section with the exception of Post Delivery Formal Organized Underway Training, shall be performed during the period from the Builder's Trials until the conclusion of Preliminary acceptance trials for each FRC-B.
- 089-6.5.2 [RFP] The Training Curriculum Guide shall be provided to each crew member 30 days prior to the scheduling of the additional FRC-B training, along with a proposed schedule.
- 089-6.5.3 [RFP] The Post Delivery Formal Organized Underway Training, shall be performed while the vessel is at the point of delivery within three weeks of the post delivery period. This training will occur during the contractor's established work-day calendar.

SECTION 090. [RFP] QUALITY ASSURANCE**090-1 [RFP] General**

- 090-1.1 [RFP] Quality Management. The contractor shall develop and implement a Quality System that complies with [ISO 9001](#), "Quality Management Systems – Requirements" as specified herein. The Contractor shall have or attain and maintain ISO certification throughout the contract period of performance. The term "organization" as used in the Standard shall denote the contractor. The term "customer" as used in the Standard shall denote the U.S. Coast Guard.
- 090-1.2 [RFP] The quality system requirements of [ISO 9001](#) shall apply with the following modifications:
- 090-1.2.1 [RFP] Paragraph (5.5.2) – Management Representative: The organizational elements of purchasing, design, production, and quality assurance shall have equal ranking in the organizational structure. The "management representative" for quality control shall report directly to the "organization's management" without intermediary reporting to any of these other organizational elements.
- 090-1.2.2 [RFP] Paragraph 5.1 – Management Commitment: A management review of the quality management system and documents related to the FRC-B Contract shall occur at least annually.
- 090-1.2.3 [RFP] Paragraph 7.2.2 – Review of Requirements related to the product: Shall apply as written with the exception that subparagraph (c) is reworded as follows: "(c) The organization has the ability to meet the defined requirements and any specified requirement that will prevent performance under this contract are reported to the customer;"
- 090-1.2.4 [RFP] Paragraph 7.5.3 – Product Identification and Traceability: Shall apply with modification as follows: "The organization shall establish and maintain documented procedures for identifying stock product (i.e., not specifically purchased for this contract) by verifiable means from receipt until assembly in the FRC-B. Traceability shall be maintained until assembly."
- 090-1.2.5 [RFP] "The organization shall establish and maintain documented procedures for unique identification of product that is specifically purchased for this contract. Identification shall be by verifiable means from receipt until assembly in the FRC-B. The procedures shall include provisions for segregating these products from stock products. Traceability shall be maintained until assembly."
- 090-1.2.6 [RFP] Paragraph 7.6 – Control of Inspection, Measuring, and Test Equipment: Shall apply as written except that availability of technical data pertaining to measurement equipment is a specified requirement.
- 090-1.2.7 [RFP] Paragraph 4.2.4 – Control of Quality Records: Shall apply as written with the addition of the following: "All records pertaining to the quality management system shall be available to the customer or the customer's representative for the period of this contract."
- 090-1.2.8 [RFP] Paragraph 5.6.1 – Replace "at planned intervals" in the first sentence with "at least quarterly"
- 090-1.2.9 [RFP] Paragraph 6.3 – Delete "as applicable" in the first sentence.

- 090-1.2.10 [RFP] Paragraph 7.1 – Delete “as appropriate” in the second paragraph.
- 090-1.2.11 [RFP] Paragraph 7.3.1 – Delete “as appropriate” in the last sentence.
- 090-1.2.12 [RFP] Paragraph 7.3.6 – Delete “where practicable” in the second sentence.
- 090-1.2.13 [RFP] Paragraph 7.3.7 – Delete “as appropriate” in the second sentence.
- 090-1.2.14 [RFP] Paragraph 7.5.1 – Delete “as applicable” in the first sentence.
- 090-1.2.15 [RFP] Paragraph 7.5.2 – Delete “as applicable” in the third paragraph.
- 090-1.2.16 [RFP] Paragraph 7.5.3 – Delete “where appropriate” from the first sentence.
- 090-1.2.17 [RFP] Paragraph 7.6 – Delete “where necessary” in the third paragraph.
- 090-1.2.18 [RFP] Paragraph 8.2.2 – Replace “at planned intervals” with “at least annually” in the first sentence.
- 090-1.2.19 [RFP] Paragraph 8.2.3 – Delete “as appropriate” in the last sentence.
- 090-1.2.20 [RFP] Paragraph 8.3 – Delete “where applicable” in subsection b).
- 090-1.3 [RFP] The contractor shall develop, implement, and maintain a Quality Plan ([CDRL 090-001](#)). The Quality Plan shall address the quality management system, management responsibility, resource management, product realization, and measurement, analysis, and improvement, as they apply to all of the FRC-B System requirements including: design, construction, testing, delivery, logistics support processes, and associated data. The Quality Plan shall provide traceability to the contractor's [ISO 9001](#) compliant quality system as documented and described in the contractor's Quality Manual. The contractor shall comply with the approved Quality Plan throughout the duration of the contract.
- 090-1.4 [RFP] The necessary building facilities, labor, materials, and management shall be provided to design, build, inspect, test, launch, outfit and ready the FRC-B for service.

SECTION 092. [RFP] TEST ADMINISTRATION**092-1 [RFP] Scope**

092-1.1 [RFP] This Section specifies the general requirements for the development of test documentation and the management and implementation of the FRC-B Test Program. The requirements of this section are supplemented by the trials and testing requirements in COR SECTION 094 and SECTION 095. The test requirements shall be expanded as necessary to verify operation of equipment or systems installed on the FRC-B.

092-2 [RFP] General

092-2.1 [RFP] Tests and inspections necessary to verify that all requirements of the COR are met shall be performed. During the conduct of all tests, no alignment or adjustment is permitted unless specifically required in the test procedures.

092-2.2 [RFP] The FRC-B Test Program shall be conducted in two phases: the In-plant Test (IPT) phase and the Shipboard Test phase. The Shipboard Test phase shall include Shipboard Tests, Builder's At-Sea Trials, and Preliminary Acceptance Trials.

092-2.3 [RFP] Both Contractor and Government Furnished Equipment shall be tested to demonstrate compliance with contractual requirements.

092-3 [RFP] Test and Evaluation Program Plan (TEPP)

092-3.1 [RFP] A TEPP ([CDRL 092-001](#)) shall be prepared to show compliance with contractual requirements.

092-3.2 [RFP] A requirements testing matrix shall be developed as a subset of the TEPP. It shall contain all requirements of the COR by ESWBS number and an indication of how each requirement will be verified (i.e., inspection, testing, demonstration, mockup, etc.). A separate indication shall be provided that shall reference the specific inspection procedure and/or test procedure. This matrix shall be updated throughout the life of the design and construction and shall reflect changes approved by the Coast Guard.

092-3.3 [RFP] The TEPP shall include all tests to be performed by the Contractor.

092-3.4 [RFP] The TEPP shall include the following content for each test:

092-3.4.1 [RFP] A listing of the tests to be performed and the schedule.

092-3.4.2 [RFP] Location of the test facility.

092-3.4.3 [RFP] A complete listing of all equipment to be used.

092-3.4.4 [RFP] Detailed test procedures for the test configuration and pass/fail criteria.

092-3.4.5 [RFP] All information to fully describe the test.

092-3.4.6 [RFP] Test data sheets.

092-3.5 [RFP] Test data sheets shall be used to record observed performance data. Included with the completed test data sheet shall be a summary of all deficiencies noted and the corrective action taken. It shall also include any recommended changes to the detailed test procedures. The data sheet shall include the following.

- 092-3.5.1 [RFP] Time and date of test.
- 092-3.5.2 [RFP] Equipment serial numbers.
- 092-3.5.3 [RFP] Test equipment and serial numbers.
- 092-3.5.4 [RFP] Name of test being performed. Include reference to the requirement and test paragraphs of the COR and reference the applicable test plan paragraph.
- 092-3.5.5 [RFP] Pass/fail criteria.
- 092-3.5.6 [RFP] Actual measured values.
- 092-3.5.7 [RFP] Date and signatures of test personnel.
- 092-3.5.8 [RFP] Appropriate space for the signature of the Coast Guard Witness.
- 092-3.5.9 [RFP] Appropriate space for the signature of the Classification Society Witness.

092-4 [RFP] Test Reports - General

- 092-4.1 [RFP] Upon completion of each test, test reports ([CDRL 092-002](#)) shall be prepared consisting of the completed test data sheets and findings in relation to the test plan.

092-5 [RFP] In-Plant Tests (IPT)

- 092-5.1 [RFP] In-Plant testing shall consist of all tests of CFE by the contractor or a vendor or manufacturer in accordance with this COR prior to the installation of the CFE aboard the FRC-B.
- 092-5.2 [RFP] IPT shall be scheduled and coordinated in accordance with the IPT schedule detailed in the test plan. The IPT schedule of testing shall be provided to the Contracting Officer 7 days before the first test procedures. Notice of test cancellation shall be provided to the Coast Guard at least 72 hours in advance of the scheduled test date. Cancelled tests shall not be restarted without notifying the Coast Guard at least 72 hours in advance. The Coast Guard may, at its discretion, observe any IPT.
- 092-5.3 [RFP] In the event of more than one failure of a unit, system, or subsystem to successfully pass an IPT, a Failure and Discrepancy Report shall be prepared and provided in accordance with [CDRL 092-003](#).
- 092-5.4 [RFP] A test report shall be prepared and provided for each test ([CDRL 092-002](#)). Upon completion of the all IPT, a booklet of IPT reports shall be prepared and delivered in accordance with [CDRL 092-004](#).

092-6 [RFP] Shipboard Tests

- 092-6.1 [RFP] The Shipboard Test phase shall be accomplished to demonstrate compliance of the FRC-B with the contractual requirements through Preliminary Acceptance Trials. The Contractor shall be responsible for the installation, maintenance and testing of all GFE and CFE whether or not specific tests for the equipment have been specified. Testing shall comply with COR SECTION 094 and/or SECTION 095 and the TEPP.
- 092-6.2 [RFP] IPT shall be completed prior to the implementation of the related portions of the Shipboard Test phase. The accomplishment of the Shipboard Test phase may require testing on CFE which is essentially identical to the testing conducted

under IPT. These tests may be required to demonstrate that the equipment, systems and subsystems have been properly transported, stored and installed aboard the FRC-B, without degradation of equipment performance established during IPT testing.

- 092-6.3 [RFP] During the Shipboard Test phase, operating logs on each propulsion unit and auxiliary diesel engine shall be maintained to show conditions, adjustments, repairs, accumulated running time, and ambient conditions ([CDRL 092-005](#)).
- 092-6.4 [RFP] The Shipboard Test schedule detailed in the Test Plan for the FRC-B shall depict a logical flow for the conduct of the Shipboard Test phase. The Shipboard Test schedule shall be provided to the Coast Guard at least 14 days in advance of testing.
- 092-6.5 [RFP] A test report ([CDRL 092-002](#)) shall be prepared and provided for each test conducted during the Shipboard Test phase. In addition to any test reports that are required for an individual component of a system or subsystem, a test report shall be prepared for each system and subsystem. Individual test reports for components shall be incorporated into the reports prepared for their respective systems and subsystems. Upon completion of the Shipboard Tests, Builder's At-Sea Trials, and Preliminary Acceptance Trials, a booklet of Shipboard Test reports shall be prepared and provided. ([CDRL 092-006](#))
- 092-6.6 [RFP] In the event of more than one failure of a unit, system, or subsystem to successfully pass a Shipboard Test, a Failure and Discrepancy Report shall be prepared and provided in accordance with [CDRL 092-003](#).

SECTION 094. [RFP] TRIALS**094-1 [RFP] Builder's At-Sea Trials (BT)**

094-1.1 [RFP] General

094-1.1.1 [RFP] Builder's At-Sea trials shall be conducted to demonstrate to the Coast Guard that the FRC-B meets contractual requirements and shall include all tests, measurements and observations noted below. The Contractor shall have onboard all required Coast Guard licensed and/or documented personnel (including a Master, 500 Gross Tons, for the appropriate route, or a superior license as defined in [46 CFR](#) and all required vessel safety equipment.

094-1.1.2 [RFP] At the time of the underway trials, the following information shall be documented, in writing, and reported in the Builder's At-Sea Trials Report in accordance with [CDRL 094-001](#).

094-1.1.2.1 [RFP] Amount of fuel on board at the beginning of the trials.

094-1.1.2.2 [RFP] Weights and longitudinal and vertical centers of gravity of all extraneous equipment not part of the FRC-B equipment or outfit.

094-1.1.2.3 [RFP] Loads required for Trial Load Condition. Such loads shall be simulated by properly secured equivalent weights at the same center of gravity as the missing loads.

094-1.1.2.4 [RFP] Numbers, weights, and locations of personnel on board during the trials.

094-1.1.2.5 [RFP] Displacement and center of gravity of the FRC-B.

094-1.1.2.6 [RFP] Trial displacement and longitudinal center of gravity.

094-1.1.2.7 [RFP] Condition of tanks and bilges.

094-1.1.2.8 [RFP] Estimated wind direction and speed.

094-1.1.2.9 [RFP] Estimated sea state and direction.

094-1.1.2.10 [RFP] Depth of water over certified measured course.

094-1.1.2.11 [RFP] Drafts at a minimum of four locations, port and starboard, fore and aft.

094-1.2 [RFP] The satisfactory operation of the following FRC-B capabilities/systems/equipment shall be demonstrated:

094-1.2.1 [RFP] Propulsion Control

094-1.2.2 [RFP] Engine Starting System

094-1.2.3 [RFP] Gauges and Alarms

094-1.2.4 [RFP] Starting System

094-1.2.5 [RFP] Electric Plant

094-1.2.6 [RFP] Generator

094-1.2.7 [RFP] Electrical Power Distribution

094-1.2.8 [RFP] Lighting System

- 094-1.2.9 [RFP] Surface Search Radar System
- 094-1.2.10 [RFP] Navigation Equipment including ECINS
- 094-1.2.11 [RFP] Interior Communications System
- 094-1.2.12 [RFP] Electronics (Communication) Equipment
- 094-1.2.13 [RFP] Bilge Pump
- 094-1.2.14 [RFP] Fire Pump
- 094-1.2.15 [RFP] Instruments and Indicators
- 094-1.2.16 [RFP] Piping Systems
- 094-1.2.17 [RFP] Heating, Ventilation, and Air Conditioning
- 094-1.2.18 [RFP] Anchor Stowage and Handling Systems
- 094-1.2.19 [RFP] Mooring and Towing Fittings
- 094-1.2.20 [RFP] Windshield Wipers and Washers
- 094-1.2.21 [RFP] Galley Equipment
- 094-1.2.22 [RFP] Fuel Oil Transfer System
- 094-1.2.23 [RFP] Cutter Boat Launch and Recovery
- 094-1.2.24 [RFP] Emergency Engine Shut-off Controls
- 094-1.2.25 [RFP] Sewage System
- 094-1.2.26 [RFP] Manual Steering/Emergency Steering
- 094-1.2.27 [RFP] Reverse Osmosis Desalinator
- 094-1.2.28 [RFP] Washer and Dryer
- 094-1.2.29 [RFP] OWS
- 094-1.3 [RFP] Propulsion System Test.
 - 094-1.3.1 [RFP] The propulsion equipment shall be checked for proper operation and to ensure that it conforms to manufacturer's specifications.
- 094-1.4 [RFP] Electric/Electronic Tests.
 - 094-1.4.1 [RFP] The operation of each AC and DC load shall be checked. This shall include operation of all electronic equipment. The operation of electronic equipment shall be checked in all modes and functions.
- 094-1.5 [RFP] Control System Test.
 - 094-1.5.1 [RFP] All engine controls shall be tested to ensure required operation in all positions. The emergency shutdown controls shall be demonstrated. The main propulsion machinery and steering gear shall be demonstrated by starting and running the machinery in accordance with the manufacturer's recommended break-in procedure. All indicator lights, gauges, meters, and alarms shall be checked for proper operation.
- 094-1.6 [RFP] HVAC Testing
 - 094-1.6.1 [RFP] The Heating Ventilating and Air Conditioning system shall be checked for required operation and conformance with COR requirements.

094-1.7 [RFP] Endurance Trial.

094-1.7.1 [RFP] During this trial it shall be demonstrated that all mechanical parts of the propulsion unit and all auxiliaries are in satisfactory operating condition. Inspections shall be carried out for leaks in all piping systems and any structural defects. The readings of all installed gauges and meters shall be recorded at 15 minute intervals. The trial shall not precede engine break-in requirements.

094-1.8 [RFP] Speed/Power.

094-1.8.1 [RFP] The speed/power characteristics of the FRC-B shall be determined for the Trial Load Condition specified in COR Section 096-1.9. The fuel rate shall be measured by adding temporary flow measurement devices on each engine's fuel supply and return lines. The running trim shall be measured at all test conditions with a bubble inclinometer. The water depth shall be at least 5 times the navigational draft of the FRC-B over the trial course. At least six different speeds shall be used to establish the curves including loiter speed, transit speed and flank (maximum) speed. The engine power and rpm shall not exceed those specified in the USCG Powering Margin Practices Manual, ELC 026-01-001. A torsion meter shall be installed on each shaft. The torsion meter shall be temporary, but have permanently install strain gauges. The speed trials shall be done over a certified measured course. Two runs shall be made over the course for each speed, one in each direction with the speeds for the two runs averaged. The contractor shall prepare graphs of SPEED vs Engine RPM, SHP vs Engine RPM, SHP vs SPEED, and Engine RPM vs Fuel Consumption. These graphs shall be provided as part of the Trial Report.

094-1.9 [RFP] Maneuvering.

094-1.9.1 [RFP] The vessel shall be subjected to maneuvering trials which shall include ahead and astern, normal and emergency steering, turning circles to right and left, and maintaining a steady course. These maneuvering trials shall demonstrate the proper functioning of the propulsion control system. These maneuvering trials shall be conducted at minimum maneuvering speed, loiter speed, and flank speed.

094-1.10 [RFP] Steering Trial.

094-1.10.1 [RFP] Satisfactory operation of the steering gear shall be demonstrated at speeds up to and including maximum speed ahead and maximum safe speed astern and maximum rudder angle both to port and starboard. Rudder angle rate shall be measured and recorded. The test shall be completed in all possible modes of steering operation.

094-1.11 [RFP] Emergency Stop.

094-1.11.1 [RFP] The FRC-B shall be at maximum speed and the throttle moved from full ahead to full astern as quickly as possible, but shifting shall not be accomplished at an engine speed greater than the maximum recommended by the engine and power train components manufacturers. The FRC-B shall be brought to a complete stop. This test shall verify propulsion system mounts, propulsion control response, and engines resistance to stall. Movement of the engines on their foundations from their position with the FRC-B at rest to their maximum excursion during emergency stop shall be

measured and recorded. The time required to come to a complete stop shall be measured and recorded.

094-1.12 [RFP] Noise and Vibration Tests.

094-1.12.1 [RFP] Noise levels specified in COR SECTION 073 shall not be exceeded at any microphone measuring position.

094-1.12.2 [RFP] Noise Measurements - The noise level testing shall be conducted under the conditions described in COR SECTION 073 and as follows:

094-1.12.2.1 [RFP] Noise measurements shall be made after completion of air balancing of the ventilation and air conditioning systems.

094-1.12.3 [RFP] Vibration testing shall be performed to demonstrate compliance with the requirements of COR SECTION 073.

094-1.13 [RFP] Dry Dock Inspection.

094-1.13.1 [RFP] The FRC-B shall be dry docked and thoroughly inspected upon the completion of Builders At-Sea Trials and before Preliminary Acceptance Trials for possible mechanical/structural defects ([CDRL 094-002](#)).

094-2 [RFP] Preliminary Acceptance Trials (PAT)

094-2.1 [RFP] Preliminary Acceptance Trials shall be conducted to demonstrate to the Coast Guard that the FRC-B meets contractual requirements. Provisions shall be made to carry fifteen (15) Coast Guard or Coast Guard designated personnel.

094-2.2 [RFP] The Preliminary Acceptance Trials requirements shall be a duplicate of all tests, measurements and observations required for the Builder's At-Sea Trials specified in COR Section 094-1.

094-2.3 The performance testing of the vessel's maximum speed shall be conducted in conjunction with the endurance portion of the trials.

094-2.4 Any of the test procedures for Builder's At-Sea Trials that fail to meet requirements, including those listed above, shall be re-tested prior to acceptance of the vessel by the Coast Guard.

094-2.5 [RFP] Preliminary Acceptance Trials (PAT) shall not be performed until all Builder's Dockside and At-Sea Trials have been successfully completed and all discrepancies corrected. The FRC-B shall be in all respects ready for delivery, except for final cleaning and paint touch up. Not less than 14 days before the Preliminary Acceptance Trials, written notification shall be provided to the Contracting Officer of the exact date of the PAT. The PAT need not be run in calm water but there will be no reduction in the required performance in rough water. Vessel safety equipment shall be provided for all persons onboard. All personnel shall be given a safety briefing prior to getting underway.

094-2.6 [RFP] The Preliminary Acceptance Trials shall be conducted at the trial load condition as defined in COR Section 096-1.9. The trial load condition and the longitudinal center of gravity shall be determined from the draft marks or freeboard measurements and the Curves of Form. The FRC-B is not considered ready for PAT until the displacement and longitudinal center of gravity are determined to be acceptable to the Contracting Officer.

094-2.7 [RFP] Upon completion of Preliminary Acceptance Trials a report shall be prepared describing the results of the trials and any corrective measures that are required ([CDRL 092-002](#)).

094-3 [RFP] Final Acceptance Trials (FAT)

- 094-3.1 [RFP] Final acceptance will be conducted by the Coast Guard prior to the end of the warranty period. Final Acceptance Trials will duplicate Preliminary Acceptance Trials. Expenses incident to this trial will be borne by the Coast Guard. The FRC-B will be operated by a Coast Guard crew. Contractor representatives may observe this trial at the Contractor's expense.

SECTION 095. [RFP] SHIPBOARD TESTS**095-1 [RFP] Shipboard Tests - General**

095-1.1 [RFP] The Shipboard tests shall consist of the construction and dock-side tests conducted to demonstrate compliance of the FRC-B and its installed systems and subsystems with all contractual requirements. In addition to requirements outlined elsewhere in this COR, the tests below shall be included in the shipboard tests and performed prior to any at-sea or underway trials. The Contractor shall ensure that equipment/components are not run in a condition which would invalidate the Original Equipment Manufacturer's warranty.

095-2 [RFP] Watertight/Weathertight Tests

095-2.1 [RFP] The hull and any other watertight/weathertight boundaries shall be tested by applying air or water with a hose externally while conducting a thorough internal visual inspection. All deckhouse boundaries, watertight/weathertight doors, scuppers, drains and other watertight/weathertight penetrations shall be similarly hose tested to reveal leakage. Tightness testing shall be completed prior to painting.

095-2.2 [RFP] If any defects arise or any compartments fail any of the prescribed tests, corrective action shall be taken and the compartments retested.

095-3 [RFP] Fuel System Test

095-3.1 [RFP] The fuel system shall be checked to confirm all the joints and connections are tight. The fuel tanks shall be hydrostatically tested after the installation of all fuel piping systems is complete. The fuel tanks shall be free of any leaks when pressurized by fresh water or fuel to a height equal to the height of the fuel vent on the main deck. The fuel piping shall be tested for tightness at 135% of maximum working pressure or 275 kPa (40 psig), whichever is greater.

095-3.2 [RFP] All valves and gauges shall be checked for proper operation. The test shall be conducted using fuel as specified in COR Section [233](#).

095-4 [RFP] Control System Test

095-4.1 [RFP] All engine controls shall be tested to ensure required operation in all positions. The emergency shutdown controls shall be demonstrated. The main propulsion machinery and steering gear shall be demonstrated by starting and running the machinery in accordance with the manufacturer's recommended break-in procedure. All indicator lights, gauges, meters, and alarms shall be checked for proper operation.

095-5 [RFP] Fixed Fire Extinguishing System Installation Testing

095-5.1 [RFP] Upon completion of installation, the fixed fire extinguishing system shall be inspected and tested by the Equipment Manufacturer's Certified Technical Representative to verify proper installation. The results of all inspections and tests shall be recorded.

095-5.2 [RFP] The fixed fire extinguishing system shall be tested to assure required operation. Testing shall be in accordance with manufacturer requirements and shall demonstrate compliance with the COR.

095-5.3 [RFP] Upon successful completion of testing and inspection, a Manufacturer's Certification shall be issued for each cutter.

095-6 [RFP] Helm Control

095-6.1 [RFP] All functionalities shall be tested for required operations from all control stations.

095-7 [RFP] Bells, Whistles, Navigation Lights

095-7.1 [RFP] All functionalities shall be tested for required operations from all control stations.

095-8 [RFP] Tanks and Voids Testing

095-8.1 [RFP] All tanks and inaccessible voids other than fuel tanks shall be hydrostatic tested for water tight integrity after installation of all systems are complete. The tanks and voids shall be free of any leaks when pressurized by fresh water to a height equal to the height of the vent on the main deck. Non-integral tanks shall be tested to the vent height as installed on the FRC-B.

095-9 [RFP] Windshield Washer/Wiper Testing

095-9.1 [RFP] The windshield wipers and washers shall be tested to meet the requirements of COR Section 625. Wipers shall be tested with a 240 kPa (35 psig) hose spraying water on the windows from a distance of 3m (9.8 ft).

095-10 [RFP] Testing of FRP Structures

095-10.1 [RFP] Test Panels

095-10.1.1 [RFP] At least 120 days prior to the start of construction on the first FRC-B, a test panels shall be laminated to demonstrate the workability of the thixotrope and resin curing system selected, to verify the methods used in the Laminate Process Description (LPD), and to verify the physical properties of the panel. The lamination process shall be witnessed by Contracting Officer.

095-10.1.2 [RFP] Test panels shall be made for thickest part of the hull (excluding keel doublers), the thickest part of the main deck, and one for each type of cored laminate construction, using the thickest core required for construction.

095-10.1.3 [RFP] The test panels shall be 1m (3.28 ft) wide, 1.5m (4.9 ft) high and laminated on a flat mold surface. The mold shall be erected at a minimum angle equivalent to the steepest angle of layup for the type of layup being tested. Layup procedures shall be the same as those called for in the Laminate Process Description, and shall be performed under the normal shop operating conditions.

095-10.1.4 [RFP] The warp of the roving shall be parallel to the longer dimension of the panel. The resin curing system and thixotrope used shall duplicate those proposed for use in construction at the ambient conditions prevailing. Half of the plies in this laminate shall be laid up followed by an 18 hour delay prior to applying the remainder of the laminate. If the thickest part of the basic hull laminate consists of an odd number of plies, include the surface mat as a ply so that the delayed bond occurs at the center of the laminate.

095-10.1.5 [RFP] The laminates shall be inspected during and after the lamination process to ensure that quality standards of this COR are met.

095-10.2 [RFP] The test results, verifying that the laminate meets the values used for design purposes for both structural and weight analysis, shall be submitted to the Contracting Officer at least 30 days prior to the start of construction. Final

disposition of the panel shall be as directed by the Contracting Officer after completion of the Contract.

095-10.3 [RFP] Core Bond Tests.

095-10.3.1 [RFP] Core failure after three consecutive tests, if required, is cause for rejection of the entire part.

095-11 [RFP] Electrical/Electronic Test

095-11.1 [RFP] The operation of each AC and DC load shall be checked. This shall include operation of all electronic equipment. The operation of electronic equipment shall be checked in all modes and functions. Navigation lights shall be checked at night to check for stray light/glare. Lighting shall be checked for required levels of illumination.

095-11.2 [RFP] The electrical generating system, distribution system, communication systems and associated electrical equipment shall be tested in accordance with [IEEE-STD-45](#).

095-11.3 [RFP] In addition to the tests of [IEEE-STD-45](#), switchboards shall be tested for continuity. Continuity shall be checked for circuits that do not connect to a conversion device to determine that power and signals are transmitted in accordance with the requirements specified on the detail schematic wiring diagrams. Discontinuity shall be checked by repositioning switches and removing fuses in the circuit to verify power interruption in accordance with the requirements specified on the detail schematic wiring diagrams. The circuits shall be tested to ground to verify proper isolation from ground.

095-11.4 [RFP] Insulation resistance tests shall be performed after installation but before placing equipment in operation. Insulation resistance measurement tests shall be made on motors, generators, transformers, line regulators and rectified power supplies after installation as set forth in [IEEE-STD-45](#).

095-11.4.1 [RFP] Insulation resistance measurements shall be made of both the primary and secondary windings of transformers and the input and output of conversion equipment. The insulation resistance shall be equivalent to the original values obtained by the manufacturers.

095-11.5 [RFP] An infrared thermographic survey shall be conducted of the following:

095-11.5.1 [RFP] Power and lighting panelboards.

095-11.5.2 [RFP] Ship service, emergency, and interior communications switchboards including bus switch, circuit breaker, meter, and terminal board connections.

095-11.5.3 [RFP] Bus transfer gear.

095-11.5.4 [RFP] Power conversion equipment and connections.

095-11.5.5 [RFP] Motors and motor controllers.

095-11.5.6 [RFP] Main generator connections

095-11.6 [RFP] The tests and inspections shall be made under operating load conditions.

095-11.7 [RFP] Tests for power quality shall be conducted with the electric plant supplying equipments expected to be operating simultaneously.

095-11.8 [RFP] Electric motors and controls shall be tested in accordance with [IEEE-STD-45](#), Section 46, Ship Tests.

- 095-11.9 [RFP] Cables and cable installations shall be tested in accordance with [IEEE-STD-45](#), Section 46, Ship Tests.
- 095-11.10 [RFP] Ship service generator and emergency generator (if provided) tests shall include the following:
- 095-11.10.1 [RFP] Control system tests (e.g. voltage and speed regulation).
 - 095-11.10.2 [RFP] No load test.
 - 095-11.10.3 [RFP] Automatic load transfer test.
 - 095-11.10.4 [RFP] Parallel operation (manual and automatic) test.
 - 095-11.10.5 [RFP] Load sharing test.
 - 095-11.10.6 [RFP] Load shedding test.
- 095-11.11 [RFP] The electric power distribution system shall be tested in accordance with [IEEE-STD-45](#), Section 46.
- 095-11.12 [RFP] Before energizing electronic equipments, the ship service or shore power shall be checked to ensure proper voltage, phasing, and frequency. When shore power is utilized for testing, a recording voltmeter shall be used to monitor the input voltage at the cutter's service switchboard. Equipment interlock circuits shall be checked to ensure they meet COR requirements and manufacturer's specifications.
- 095-11.13 [RFP] The insulation resistance of non-coaxial cables, prior to installation of connectors, not terminated by equipment, shall be measured using a 500V megohmmeter.
- 095-11.14 [RFP] Tests of continuity and insulation resistance of switchboard wiring shall be made at the same time as the continuity and insulation resistance tests of the connected circuits are made.
- 095-11.15 [RFP] Before installation, coaxial cable shall be inspected and the insulation tested by measurement with a 500-volt megohmmeter to determine that the cable is not damaged and has not been deteriorated.
- 095-11.16 [RFP] Insulation resistance values of cables with polyethylene or polytetrafluoroethylene dielectric shall equal or exceed the following:

LENGTH (m (feet))	INSULATION RESISTANCE (MΩ)
0 – 30.5 (0 – 100)	40,000
30.5 – 61 (100 – 200)	20,000
61 – 152.4 (200 – 500)	8,000
152.4 – 304.8 (500 – 1000)	4,000

- 095-11.17 [RFP] Insulation resistance values of coaxial cable with synthetic rubber dielectric shall equal or exceed 1,000 MΩ for lengths up to 304.8m (1,000 ft) at a temperature of 16°C (60.8°F), the resistance value shall be adjusted to a temperature coefficient specified by the cable manufacturer for the type of cable being tested. In cables with a dielectric material arranged in layers of conducting and non-conducting rubber, the insulation resistance shall exceed 500 MΩ for lengths up to 304.8m (1,000 ft).

- 095-11.18 [RFP] The insulation resistance of coaxial cables having magnesium oxide dielectric shall equal or exceed 10,000 MΩ for lengths up to 304.8m (1,000 ft).
- 095-11.19 [RFP] If coaxial RF cable is installed where it is exposed to temperatures in excess of 66°C (151°F), its attenuation shall be tested in accordance with [MIL-C-17](#).
- 095-11.20 [RFP] Time domain reflectometry (TDR) or frequency domain reflectometry (FDR) measurements shall be made for RF transmission lines, in accordance with [NAVSHIPS 0969-120-7010](#), after defects disclosed by insulation tests or visual inspection have been corrected. Lines having a voltage standing wave ratio (VSWR) higher than that specified by the manufacturer ratio of the cable shall have corrective action applied until the specified VSWR is obtained. For the Surface Search Radar (SSR), lines having a VSWR higher than that specified by the SSR manufacturer shall have corrective action applied until the specified VSWR is obtained. Measurement records shall plainly identify the line under test by its assigned designator.
- 095-11.21 [RFP] The navigation light fixtures, navigation light panel, searchlight and signal light shall be tested and documented in accordance with [DOD-HDBK-289\(SH\)](#).
- 095-11.22 [RFP] Interior communication systems shall be tested in accordance with [IEEE-STD-45](#), Section 46.
- 095-11.23 [RFP] At some time during interior communications switchboard tests, all supply voltages shall be applied simultaneously.
- 095-11.24 [A009] Reserved.

095-12 [RFP] Fire and Smoke Detection System Tests

- 095-12.1 [RFP] The fire and smoke detection system shall be tested with a manufacturer's representative present to ensure the system is fully operable and provides the protection required by the COR.

SECTION 096. [RFP] WEIGHTS**096-1 [RFP] Definitions**

- 096-1.1 [RFP] Light Ship Condition: The FRC-B complete ready for service in every respect including onboard repair parts, outfit, liquids in machinery at operating levels (including free flooding liquids) less crew and variable loads.
- 096-1.2 [RFP] Full Load Condition: The FRC-B in the Light Ship Condition plus the following variable loads: full complement of officers and crew including personnel effects; all supplies and stores; 95% fuel; 95% lubricating oil; 100% potable water; sewage tank at one-third full and dirty oil tank empty.
- 096-1.3 [RFP] Minimum Operating Condition: The FRC-B in the Light Ship Condition plus the following variable loads: full complement of officers and crew including personnel effects; one-third of the full load amount of consumable loads (fuel, water, supplies and stores), sewage tank at two-thirds full and dirty oil tank at one-half full.
- 096-1.4 [RFP] Half Load Condition: The FRC-B in the Light Ship Condition plus the following variable loads: full complement of officers and crew including personnel effects; one-half of the full load amount of consumable loads (fuel, water, supplies and stores), sewage tank at one-half full and dirty oil tank at one-half full.
- 096-1.5 [RFP] Service Life Margin: The End of Service Life (EOSL) Margin is meant to take into account growth in the FRC-B's weight over its service life. The weight is located on centerline, with its vertical center of gravity at the main deck and its longitudinal center of gravity which results in the KG margin specified in 096-1.5.2.
- 096-1.5.1 [A010] The minimum EOSL shall be 4.5% of the Light Ship Displacement, of the total of SWBS groups 1 - 7 plus the Design, Build, and Contract Modification Margins.
- 096-1.5.2 [RFP] The KG margin shall not be less than 5% of the Light Ship KG at delivery.
- 096-1.6 [RFP] Full Load Condition, End of Service Life (EOSL): Same as Full Load Condition plus the Service Life Margin.
- 096-1.7 [RFP] Minimum Operating Condition, EOSL: Same as Minimum Operating Condition plus the Service Life Margin.
- 096-1.8 [RFP] Half Load Condition, EOSL: Same as Half Load Condition plus the Service Life Margin.
- 096-1.9 [RFP] Trial Load Condition: Same as Full Load Condition, EOSL.
- 096-1.10 [RFP] Design Margin: Weight and moment allowance included in the weight estimate to compensate for weight and moment changes to the weights caused by detailed drawing development, growth in Contractor-furnished material weights, and omissions and errors in the weight estimate. This margin shall be in accordance with COR Section 096-2.3. This design margin is available at the beginning of the contract is 100%, but may be absorbed by the completion of working drawings. Departures from the weight estimate are reflected by concurrent adjustments to this margin (see COR Section 096-2.3).

- 096-1.11 [A010] Builder's Margin: A weight and moment allowance included in the weight estimate to compensate for discrepancies between the estimated weight and the actual weight. It accounts for differing shipbuilding practices, omissions from working drawings, unknown mill tolerances, outfitting details, variations between the actual cutter and the curves of form and similar differences. This margin shall be a minimum of 2% of the Light Ship Condition of the total of SWBS groups 1 - 7 plus the Design Margin. This margin shall be carried from concept design through construction for SWBS groups 1 through 7. This margin shall be applied at the Light Ship Condition center of gravity.
- 096-1.12 [A010] Contract Modification (CM) Margin: This margin is to compensate for all non-GFE Government responsible modifications to the contract. It is a weight and moment allowance included in the weight estimate to account for increases associated with contract modifications issued during the detail design and construction. This margin shall be a minimum of 2% of the Light Ship Condition of the total of SWBS groups 1 - 7 plus the Design Margin. This margin shall be carried from concept design through construction for SWBS groups 1 through 7. This margin shall be applied at the Light Ship Condition center of gravity. Only the Contracting Officer shall have the rights of using CM Margin.
- 096-1.13 [RFP] Government Furnished Equipment (GFE) Margin: A weight and moment allowance included in the weight estimate to account for increases caused by growth in GFE during the detail design and construction. This margin shall be applied on the centerline at the main deck for the vertical center of gravity and at the Light Ship Condition center of gravity for the longitudinal center of gravity. Only the Contracting Officer shall have the rights of using this GFE Margin.
- 096-1.14 [RFP] Design and Construction Weight Estimates (DCWE): Weight estimates which are updated during detail design and construction to reflect the design development. They include actual weights for items which have been received, and margins adjusted to reflect construction. They consist of the estimates of the Light Ship, Full Load and Minimum Operating Condition displacements including the vertical, longitudinal and transverse centers of gravities (VCG, LCG & TCG respectively) and their associated drafts, list and trim. The estimates shall include all GFE weights. The estimates shall also include the Design Margin, the Builder's Margin, the Contract Modification Margin and GFE Margin. In addition, the DCWEs shall include the weights for the Full Load and Minimum Operating Conditions with and without the Service Life Margin.
- 096-1.15 [RFP] Design and Construction Weight Reports (DCWR): Weight reports prepared by the Contractor and submitted periodically during design and construction of the FRC-B consisting of the current DCWEs along with supporting calculations (see COR Section 096-4.1).
- 096-1.16 [RFP] Final Weight Report (FWR): A final, complete weight report after completion of design and construction that reflects the final as built condition of the FRC-B (see COR Section 096-4.2).

096-2 [RFP] Weight Control Program Requirements

- 096-2.1 [RFP] A comprehensive Weight Control Program shall be prepared and implemented for the design and construction of the FRC-B, in accordance with SAWE [RP 12C](#) & [RP 14](#), to ensure that the FRC-B is delivered within the weight and stability requirements set forth in this COR. The Weight Control Program

Plan shall be submitted to the Contracting Officer in accordance with [CDRL 096-001](#).

096-2.2 [RFP] A margin policy shall be utilized which reflects the level of confidence in the weight estimate, and is applied individually to each entry in the weight report. A margin policy shall be implemented which ensures that the vessel is delivered within the weight and center of gravity limitations. At a minimum, the margin policy shall include Design Margins, Builder's Margin, Contract Modification Margin and GFE Margin as provided in this section.

096-2.3 [RFP] Design Margins - The DCWE shall contain at least the following Design Margins. (see COR Section 096-1.10):

096-2.3.1 [RFP] Any item identical to the Parent Craft and/or any selected equipment over 500kg whose weights are certified by the vendor and all actual weights shall have a minimum margin of 2%; except Group 100 in FRP hulls shall have a minimum margin of 6%.

096-2.3.2 [RFP] Any other item or system shall have a margin based on the three-digit Craft Weight Breakdown number (SWBS Group) of the item as follows:

SWBS Group	Design Margin (%)
100	6
200	6
300	12
400	12
500	12
600	12
Loads (fuel, etc.)	5
All GFE	12

096-2.3.3 [RFP] The vertical locations of these margins shall be selected to provide the vertical center of gravity margin considered appropriate by the Contractor. The margin shall not be located lower than the center of the weight of the particular group.

096-3 [RFP] Determination of Weights - Submission of Calculations

096-3.1 [A010] Calculations shall be in accordance with SAWE [RP 12C](#) & [RP 14](#). As design and construction of the FRC-B progresses the weights and centers of gravities shall be updated. Detail design margins shall be adjusted accordingly. The final weights shall be obtained by weighing or, by calculation from FRC-B construction drawings and sampling unit weights. Use Table 096-1 for crew and effects, and provisions and personnel stores weight standards.

Table 096-1

Weight Allowances			
CREW & EFFECTS	CREW Kg (lb)	EFFECTS Kg (lb)	TOTAL Kg (lb)
Officers (Comm. & Warr.)	84 (185)	45 (100)	129 (285)
Chief Petty Officers	84 (185)	34 (75)	118 (260)
Other Enlisted Personnel	84 (185)	23 (50)	107 (235)
PROVISIONS & PERSONNEL STORES	Rate of Consumption Kg/man-day (lb/man-day)		Stowage Factor Kg/m³ (lb/ft³)
Total Allowance	1.8 (4.0)		480 (30.0)

- 096-3.2 [RFP] A weighing program shall be conducted to obtain actual weights of representative structures, components, materials and equipment. All items in excess of 20 kg shall be weighed. The actual weighing program shall include weighing:
- 096-3.2.1 [RFP] Plates and shapes to determine mill tolerances.
 - 096-3.2.2 [RFP] Material, structures and components on a selective or sampling basis to verify calculated weights.
 - 096-3.2.3 [RFP] Insulation, sheathing, piping, paint and welding to obtain reliable unit weights.
 - 096-3.2.4 [RFP] Vendor-supplied components, including both contractor and Government-furnished, in excess of 20kg (44.1 lbf) for verification of weights or calculated weights supplied by vendors.
- 096-3.3 [RFP] Information shall be provided on the net weight and location of the center of gravity of all major assemblies to be installed on the FRC-B.
- 096-3.4 [RFP] Where geometry is defined for systems and parts, methods of calculating the quantity and center of material shall be chosen using established mathematical algorithms appropriate to the geometry. Quantity and centers of material with fully defined geometry shall not be estimated without calculations.

096-4 [RFP] Weight Reports

- 096-4.1 [RFP] Design and Construction Weight Report (DCWR)
- 096-4.1.1 [RFP] The (DCWR) shall comply with SAWE RP 12C & RP 14 and shall be prepared to include further design development in the detail design stage, actual weighing data for individual components during construction, and any changes developed during the construction process. The weight report shall accurately reflect the condition of the FRC-B within 10 days of the submittal date ([CDRL 096-002](#)).
- 096-4.2 [RFP] Final Weight Report
- 096-4.2.1 [RFP] The final weight of the FRC-B shall be determined prior to Builder's Trials. The Final Weight Report shall be provided in accordance with [CDRL 096-003](#). No design and construction margins shall be included in this weight

report except that a positive or negative adjustment shall be made based on the inclining experiment data.

096-5 [RFP] Weight Report Requirements

- 096-5.1 [RFP] Weight reports shall be formatted in accordance with ESWBS and shall follow the requirements of SAWE RP 12C & RP 14.
- 096-5.2 [RFP] The weights shall be referenced to the arrangement drawings, system diagrams, and other drawings prepared in accordance with the Contract. Every item over 2 kg shall be listed separately. Items such as insulation, paint, deck covering, etc., may be listed as a single entry.
- 096-5.3 [RFP] Weight Report Supporting Calculations shall be submitted with each weight report submitted.
- 096-5.4 [RFP] Weight reports shall provide the displacement and center of gravity location for the light condition, the minimum operating load condition, the full load condition, the minimum operating load condition at EOSL, the half load condition at EOSL and the full load condition at EOSL. In addition, the weight reports shall include the draft and trim for each condition.
- 096-5.5 [RFP] Weight reports shall include graphs depicting the depletion of margins, the Light Ship weight, and the center of gravity locations over the construction cycle. The graphs shall include lines or other graphic elements depicting limits of weight and centers required to meet other requirements of this COR.
- 096-5.6 [RFP] Weight may be obtained either from suppliers, by calculation from working drawings, by weighing items, or by a combination of the above. The weights of piping, insulation, structural components etc. may be calculated. These items shall be weighed on a selective or sampling basis, as determined by the Contractor, to establish the accuracy of calculated weights. Where factors or percentages are utilized for calculating paint, welding weights, and etc. the Contractor shall be prepared to substantiate values by background information.
- 096-5.7 [RFP] Weight reports shall consist of the latest update of the design weight and shall highlight areas of weight or moment growth from the last report for the FRC-B.

SECTION 097. [RFP] INCLINING EXPERIMENT**097-1 [RFP] General**

- 097-1.1 [RFP] The inclining experiment shall be conducted on the first and, if options are exercised, one other FRC-B to be selected by the Contracting Officer. The inclining experiment shall be conducted prior to Builder's Trials. The inclining experiment shall be conducted with the FRC-B fully outfitted.
- 097-1.1.1 [A009] Weights may be used in lieu of outfitting for the inclining experiment prior to Builder's Trials; however an inclining experiment shall be conducted prior to delivery of the lead FRC-B, fully outfitted.
- 097-1.2 [RFP] The inclining experiment shall be performed in accordance with the procedures outlined in U.S. Coast Guard Naval Engineering Manual, ([COMDTINST M9000.6E](#)), Chapter 097.
- 097-1.3 [RFP] The procedure to be followed for the inclining experiment shall be submitted no later than 90 days prior to the execution of the experiment. ([CDRL 097-001](#))
- 097-1.4 [RFP] The inclining experiment shall be performed by the Contractor and will be witnessed and approved by the Contracting Officer or the Contracting Officer's Technical Representative (COTR).
- 097-1.5 [RFP] All inclining weights, equipment for observations, cribbing and other material required for the experiment shall be Contractor furnished. All labor necessary shall be provided for preparing the FRC-B for inclining, for installing apparatus, for taking measurements and observations, and for handling lines and shifting inclining weights during the experiment.
- 097-1.6 [RFP] The inclining experiment shall include measurements to determine the "as-inclined" natural roll period.
- 097-1.7 [RFP] Photographs shall be taken of the vessel prior to the test which shows the vessel's condition and the arrangement of the inclining experiment equipment.
- 097-1.8 [RFP] If, in the opinion of the Contracting Officer, the weather or any other condition is not satisfactory, the inclining experiment shall be postponed.
- 097-1.9 [RFP] An Inclining Experiment Report shall be prepared and delivered in accordance with [CDRL 097-002](#).
- 097-1.9.1 [RFP] The inclining experiment report shall include the description of the test, inclining experiment calculations on the forms required by [COMDTINST M9000.6E](#), Appendix A, photographs of the craft taken during the test, and a summary of the weight conditions. The inclining experiment report shall include the stability calculations for Full Load, Half Load (EOSL), Minimum Operating, Light Load, Minimum Operating (EOSL), Half Load (EOSL), and Full Load (EOSL) conditions and shall be submitted to the Contracting Officer for approval. The roll period constant shall be calculated for each condition.
- 097-1.9.2 [RFP] The inclining experiment report shall include measurements of appendage draft from the calculated Full Load (EOSL) condition waterline to the bottom of the lowest point in the same vertical plane.
- 097-1.9.3 [RFP] A margin of 75mm (3 in) to account for the inaccuracies of the inclining experiment shall be added to the Vertical Center of Gravity (KG) at the Light

Condition. For each loading condition, the virtual KG shall be calculated with the free surface effect. Stability calculations shall be performed using the virtual KGs.

SECTION 098. [RFP] MODELS AND MOCKUPS**098-1 [RFP] Display Model**

- 098-1.1 [RFP] The contractor shall furnish a scale model of the FRC-B suitable for display.
- 098-1.2 [RFP] The model shall be built to a scale of 1:25.
- 098-1.3 [RFP] The hull, pilothouse and all components of the model shall conform accurately to the scaled dimensions of the FRC-B.
- 098-1.4 [RFP] The model shall be constructed and finished using durable materials that are resistant to humid conditions.
- 098-1.5 [RFP] The model shall be of sufficient detail to accurately reflect the FRC-B including, but not limited to, the following:
 - 098-1.5.1 [RFP] Realistic colors and finishes.
 - 098-1.5.2 [RFP] A hull which is outfitted to accurately reflect the FRC-B including any prominent components that may be provided on the FRC-B such as a stern ramp and deck gratings.
 - 098-1.5.3 [RFP] Exterior equipment and furnishings including: masts; hatches; windows and portlights; vents; mooring fittings; tow bitt(s); towline reel; handrails; non-skid; antennas; lights; outfit including P-6 pump container, P-100 pump container, life rings, distress marker lights, and boat hooks; window wipers; and anchor.
 - 098-1.5.4 [RFP] Transparent pilothouse windows, allowing visibility to a fully outfitted pilothouse. The interior of the pilothouse shall reflect the the configuration of the FRC-B to include: seats; consoles; ladders; hatches; navigation displays and radios; and primary propulsion controls.
 - 098-1.5.5 The Cutter Boat shall be shown stowed, covers shall not be fitted.
- 098-1.6 [RFP] The model shall include Coast Guard markings, including the stripe, "U.S. Coast Guard", hull number, and name. The Contracting Officer will specify the hull number and name when the model is ordered.
- 098-1.7 [RFP] The model shall set on a scale cradle and mounted to an oak base with a "honey" finish. The base shall be provided with port and starboard brass plaques that identify the model and the "US Coast Guard Fast Response Cutter (FRC-B)" and give the basic dimensions of the FRC-B and the manufacturers name.
- 098-1.8 [RFP] The model shall be enclosed in a safety plate glass case on a display table in accordance with [CG Drawing FL 3209-8](#).
- 098-1.9 [RFP] The model shall be provided with a display table that is 0.76m (30 in) high with a width and depth appropriate to contain the model. The table legs shall be untapered and square in cross section. The table shall be of oak with a natural finish.
- 098-1.10 [RFP] The model, case, and table shall be provided with a crate suitable for shipping.

098-2 [RFP] Mock-ups

- 098-2.1 [A010] The contractor shall design, develop, provide, and maintain a full-scale, fully representative mock-up of the FRC-B pilothouse, galley and mess deck, OM&S stowage, and C2 Suite. A 3D CAD/mock-up fully integrated design review process may be implemented. Early design reviews may be supported by 3D CAD mock-ups in lieu of the physical mock-ups, transitioning to physical mock-ups for detail design hands-on operator input reviews. Applicable portions mock-ups (3D CAD or physical) shall be available prior to the submission of related data delivered in support of design review phases and shall be maintained and remain available for Government use for the duration of the contract performance period. The Government intends to use the mock-ups to facilitate the design review process and to evaluate engineering change requests and engineering change proposals. The Contractor shall use the mock-up to demonstrate configuration of the FRC-B during the design review process and may, with prior government approval, use the mock-up to demonstrate proposed engineering changes during the performance period.
- 098-2.2 [RFP] The mock-up shall be constructed of suitable durable materials that will facilitate easy reconfiguration of cutter systems during the design/change review processes. Non-functioning mock-ups of individual components may be used in all spaces, unless otherwise noted in this section, provided all relevant functions and access points are conveyed. The FRC-B mock-up may be built in sections to facilitate ease of use and construction. All hull and deckhouse structural frames, stiffeners and brackets shall be included in the mock-up if they:
- 098-2.2.1 [RFP] Pose a physical hazard (such as a tripping hazard) that may injure the crew or inhibit the crew's operation of the boat or equipment (such as a stanchion in the middle of the engine room), or impair visibility (such as a stiffener between pilothouse window frames) of the operators.
- 098-2.2.2 [RFP] Interfere with access to equipment controls and emergency shut-off switches.
- 098-2.2.3 [RFP] Interfere with the removal of filters, general maintenance (such as changing the main engine oil), or replacement of equipment parts (such as removing exhaust risers, turbocharger, or water pump on the main engines).
- 098-2.2.4 [RFP] Are an integral part of the removal process of large items such as gear boxes, engines or reduction gears; i.e. a padeye is mounted on the structural member that is to be used for attaching or hoisting equipment.
- 098-2.3 [RFP] The Contractor shall design and construct the mock-up utilizing [MIL-M-23530A](#) Sections 3.1, 3.2, 3.4 and 3.8 as guidance. Mock-ups for the FRC-B shall be Type II (full scale) and Class 1 (exact reproduction of shape and external dimensions) unless otherwise specified in this section.
- 098-2.4 [RFP] The mock-up will also be used to verify Human Factors Engineering requirements of COR SECTION 088. It shall correctly reflect: space and volume, egress passageways and aids (handholds, rails, steps, etc.), arrangements, location and layout of controls of the represented space or area. The mock-up does not need to reflect noise, vibration, climate, or environmental conditions that the craft will experience.
- 098-2.5 [RFP] The mock-up shall include the actual lighting configuration of the FRC-B, including instrument panels and other surfaces normally illuminated by internal lighting. Additionally, the contractor shall provide the capability to darken all

external lighting sources in order to evaluate nighttime lighting for all interior and exterior locations on the mock-up.

- 098-2.6 [RFP] Pilothouse. The government will use the pilothouse mock-up to demonstrate egress by the crew, range of visibility from seated and standing positions, to evaluate the effect of heel and trim on visibility, and to evaluate the arrangement and accessibility for operation of equipment mounted or stowed in the pilothouse. Actual windows, seats, console gauges, controls, and equipment matching the configuration of the FRC-B shall be provided. The mock up shall be constructed so that it has the capability to simultaneously simulate underway heel and trim angles.
- 098-2.7 [A009] Galley and Mess Deck. The government will use the galley and mess deck mock-up to demonstrate egress by the crew and to evaluate the arrangement and accessibility for operation of equipment mounted or stowed. A non-functional representation of the seats and equipment matching the configuration of the FRC-B shall be provided.
- 098-2.8 [RFP] C2/SCCS Suite. The Government will and the Contractor shall use the two mock-ups of the C2 Suite, described in COR Section 410, to verify the proper operation of the Government furnished software on the Contractor furnished software. One mock-up shall be retained at the Contractor's facility while the other shall be delivered to the USCG's C2CEN for troubleshooting, engineering development, and system support.
- 098-2.9 [A009] OM&S Stowage. The Government will use the OM&S Stowage mock-up to assess OM&S stowage arrangements for accessibility and adequacy. The mock up shall be constructed in accordance with [MIL-STD-1339C](#).

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 100 – Structure

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SECTION 100. [RFP] REQUIREMENTS FOR HULL STRUCTURE**100-1 [RFP] General**

- 100-1.1 [RFP] The FRC-B shall be designed, constructed, certified and classed to the requirements of the [ABS HSNC](#) Guide to meet the classification requirements in COR Section [070](#). Follow-on sections of the COR identify exceptions or additions to the ABS HSNC Guide requirements.
- 100-1.1.1 [RFP] Direct Analysis. Direct analysis shall be performed to demonstrate the adequacy of the structural design in accordance with 3-1-3 of the [ABS HSNC](#). The analysis shall be accomplished in accordance with the ABS Guidance Notes on Dynamic Load Approach for High Speed Craft as indicated in the aforementioned section of the [ABS HSNC](#) Guide. The primary hull strength and hull pressures are to be confirmed by first principal analysis and model testing if available. ([CDRL 085-110](#))
- 100-1.1.2 [RFP] Loading. Operational conditions for structural design shall comply with the [ABS HSNC](#) Guide 3-2-2 Table 1, modified as follows:
- 100-1.1.2.1 [RFP] Speed – Survival condition: 10knots minimum or loiter speed of FRC-B, whichever is greater.
- 100-1.2 [RFP] The hull structural arrangement shall be the same as the Parent Craft except as modified such that the vessel can comply with the classification requirements and operating characteristics indicated in COR Section 070. The hull structural arrangement is defined as the framing, webs, longitudinals, and girders. Structural bulkheads and main deck structure need not be identical to the Parent Craft provided the requirements of COR Sections 100-1 (General), 100-3 (Aluminum or Steel), or 100-4 (FRP) are satisfied. Any other hull arrangement structural changes must be approved by the Contracting Officer.
- 100-1.2.1 [RFP] The hull and deck shall be constructed of the same type of material (all steel, all aluminum, or all FRP). The deck and hull materials may be of different thickness and have different mechanical properties but must be compatible with each other.
- 100-1.3 [RFP] If the Parent Craft hull structure (principal hull structure, structural bulkheads, and main deck) is steel, the FRC-B hull structure shall be steel. If the Parent Craft hull structure is aluminum, the FRC-B hull structure shall be aluminum. The alloy of the metal (steel or aluminum) shall be the same as the Parent Craft. A substitute alloy may be used providing it is one of the alloys allowed and the substitute alloy is of equivalent or higher strength than the Parent Craft alloy. If the Parent Craft is fiber reinforced plastic (FRP), the FRC-B shall be fiber reinforced plastic with the same fiber reinforcement and method of lamination. Vinylester resins that comply with the [ABS HSNC](#) Guide requirements shall be substituted for polyester resins if used in the parent craft hull structure.
- 100-1.4 [RFP] Cored laminates shall not be used for the hull bottom, hull sides, and transom.
- 100-1.5 [RFP] If the Parent Craft used metric plates and shapes, equivalent U.S. standard plates and shapes may be substituted. For plates, equivalent means equal or greater thickness. For shapes, equivalent means equal or greater shear area and section modulus.

- 100-1.6 [RFP] Structure not specifically addressed by the [ABS HSN C](#) Guide shall withstand the loads that can reasonably be expected in service, including the effects of ship motions and environmental loads, using recognized industry standards and allowable stresses. Loads shall be combined as appropriate to represent worst case loading conditions. The structure shall withstand loads due to docking, towing, cutter boat launch and recovery, side impact loads (fendering), dry docking, replenishment operations, heavy seas and other operational loads.

100-2 [RFP] Fatigue Life

- 100-2.1 [A001] A Fatigue Analysis shall be submitted demonstrating that the FRC-B has adequate fatigue life for operating 2,500 hours per year for a 20 year Service Life. The Fatigue Analysis shall be developed in accordance with the General Design Procedures set forth in Fatigue Design Guidance for Surface Ships, [NSWCCD-65-TR-2000/25](#). Whipping stresses shall be estimated based on empirical data for similar parent craft. The speed and heading probabilities used in the Fatigue Analysis shall be as given in the following Table. This table applies to significant wave heights (Hs) up to and including Hs=6m (19.7 ft). For Hs greater than 6m (19.7 ft), the speed shall be 10 knots and the heading shall be head seas.

Heading	Speed		
	Loiter	Transit	Flank
Head (0°)	0.150	0.035	0.020
Bow (30°)	0.188	0.045	0.040
Beam (90°)	0.112	0.035	0.020
Stern Qtr (135°)	0.188	0.023	0.010
Follow (180°)	0.112	0.012	0.010

- 100-2.1.1 [RFP] The seasonal wave height probabilities and modal wave period probabilities used in the analysis shall be based on the Annual North Pacific as defined in Global Wave Statistics for Structural Design Assessments, [NSWCCD-HD-1048-01](#).

100-3 [RFP] FRP Design Requirements (if provided, other than principal hull structure and scantlings)

- 100-3.1 [RFP] Cored laminates shall not be used in the bulwarks.
- 100-3.2 [RFP] Linear PVC core material shall not be used for areas that are exposed to direct sunlight or high heat (such as machinery compartments).
- 100-3.3 [RFP] Cored material shall not be used in areas that are subjected to the weather, nor in tanks.
- 100-3.4 [RFP] Integral tanks are not allowed.
- 100-3.5 [RFP] Laminating materials shall be used at temperatures meeting the recommendations of the laminating manufacturers (including gel coat, laminating resin, reinforcement, core and other materials).

100-4 [RFP] Details of Construction – Aluminum and Steel

- 100-4.1 [RFP] Where possible, beam and column ends shall land on other structural framing members. If not possible, beam ends shall be modified to prevent puncturing of the plating by end rotation. This shall be accomplished by installation of headers or brackets spanning to adjacent structure.

- 100-4.2 [RFP] Structure and fittings in way of propulsion and auxiliary machinery shall be arranged to provide clearance for disassembling parts and components without dismantling other machinery, structure or piping.
- 100-4.3 [RFP] Doors, arches, and other openings shall be located so that a minimum number of stiffeners are cut, and so that the efficiency of the bulkhead as a strength member is not impaired. All arches and other openings shall be reinforced to maintain equivalent structural strength of the bulkhead.
- 100-4.4 [RFP] Where a structural bulkhead or deck house side crosses a structural bulkhead, web frame, or deep girder below the deck, forming a knife-edge support, chocks shall be fitted to the under-member in the plane of the crossing bulkhead so as to distribute the load and avoid hard spots.
- 100-4.5 [RFP] Sharp or ragged edges of exposed access holes shall be fitted with flat bar facings except as noted elsewhere in the COR. Exposed plate ends that may cause personal injury shall be faced with 1" schedule 40 pipe.
- 100-4.6 [RFP] Attachment of components to structural members shall not reduce the strength of the member unless the member has been specifically sized for such purpose. Brackets, margin plates, doubler plates, inserts, or special framing may be attached to the structure and used for mounting components.

100-5 [RFP] FRP Details of Construction

- 100-5.1 [RFP] Major components shall not be removed from their molds prior to the installation of supporting structure such as bulkheads, stiffeners, and frames.
- 100-5.2 [RFP] The resin curing system used with the resin shall be compatible with the fabrication process and resin manufacturer's recommendations. Resin shall be mixed in a manner minimizing air inclusion. A record shall be kept of the cup gel times. ([CDRL 100-001](#))
- 100-5.3 [RFP] All core material shall be coated with catalyzed resin prior to bonding to the laminate or applying laminate in accordance with the core manufacturer's recommendations.
- 100-5.4 [RFP] Faces of core material shall be cleaned of loose material prior to laminating. The thickness of core material shall not vary from that specified by more than 2mm (0.079 in). The difference in thickness between adjacent pieces of core in a panel shall not be greater than 0.5mm (0.02 in). The gap between adjacent pieces of core shall not exceed 3mm (0.118 in). The gap shall be filled with syntactic foam.
- 100-5.5 [RFP] Hull doublers shall be buried between the plies of the hull laminate or shall be applied to the interior surface of the laminate after the hull laminate is installed. If the doubler is to be buried in the hull laminate, a minimum of two full plies of the hull reinforcement laminate shall be installed prior to installation of the doubler. Unless otherwise specified on the drawings or by [ABS HSNC](#), each ply of doubler shall extend at least 25mm (1.0 in) in all directions beyond the previously applied ply. (Example: If the drawings require a three-ply, 150mm (5.91 in) wide doubler, the first ply shall be 150mm (5.91 in) wide, the second ply shall be 200mm (7.87 in) wide and the third ply shall be 250mm wide (9.84 in).) Pre-impregnated reinforcement shall be handled in accordance with the manufacturer's recommendations.
- 100-5.6 [RFP] After longitudinal and transverse framing and bulkheads have been installed, and before the hull is removed from the mold, the surface of the

laminates shall be sealed with 25 to 50 micrometers (μm) of catalyzed resin. The surfaces of the basic hull laminate, doublers, bonding angles, framing and bulkheads shall be coated.

- 100-5.7 [RFP] Gel coat and laminating resins shall not be pigmented. Tinting of the catalyzing agents is desirable. Gel coat may be pigmented if used for deck house structure.
- 100-5.8 [RFP] Assembly -- The fit up of laminated parts shall be such that the gap between parts does not exceed 5mm (0.2 in).
- 100-5.9 [RFP] Prior to finish painting, the hull and laminated components shall be stored inside or otherwise protected from the direct rays of the sun, weather and accumulation of water.
- 100-5.10 [RFP] All major laminated components shall not be painted, sanded, or assembled in a manner preventing complete access prior to inspection.
- 100-5.11 [RFP] Attachments to bulkheads for the purpose of supporting local weights shall not impair the strength or tightness of the bulkhead. Insert plates, special framing, and stiffening shall be installed as necessary to distribute local stress and, as far as practicable, the attachments shall be made to the special framing and not directly to the bulkhead structure.
- 100-5.12 [RFP] FRP structure shall have brackets, doublers, inserts or special framing installed as necessary to distribute local loads.
- 100-5.13 [RFP] Where items such as propulsion machinery, steering gear, mooring fittings, and lifting fittings, which require high strength connections, are fastened to FRP, a close and accurate fit between the faying surfaces shall be obtained. On non-molded surfaces, fittings shall be set on bosses formed of filled resin or mat. On molded surfaces, bosses with continuous matching the contours of the fitting shall be molded in as necessary. Faying surfaces shall be clean. The fittings shall be set in adhesive and assembled with sufficient pressure to cause the adhesive to begin to squeeze from between the faying surfaces.

100-6 [RFP] Holes in Structure

- 100-6.1 [RFP] Circular holes may be used either to reduce the weight of the structure or to provide access.
- 100-6.2 [RFP] For metal structure, scallops may be used in the longitudinal and transverse frames to reduce the weight of the structure. The design of scalloped structure shall conform to [ABS HSNB](#). Scallops in the bottom area or in other areas where water may collect shall be welded all around to seal faying surfaces.
- 100-6.3 [RFP] Openings in principal structure shall be well separated, and not aligned in a transverse plane. Where openings, of necessity, must be close together, they shall be combined to form a single opening.
- 100-6.4 [RFP] Cutting, burning holes, drilling or tapping flanges of structural members shall not be done unless the members were sized with due consideration for such drilling or tapping.

100-7 [RFP] Limber Holes - Aluminum and Steel

- 100-7.1 [RFP] Limber holes shall be provided in longitudinal and transverse members for bilge drainage and to prevent the accumulation and retention of liquids and to permit their free flow to drains, scuppers, sumps, and suction pipes. Limber holes in bottom longitudinals and keelsons shall be located to ensure drainage of

each bay formed by longitudinals and transverse frames. The number and size of limber holes may be reduced by including the area of scallops and cutouts for shell seams and butts where they are available for drainage.

- 100-7.2 [RFP] Limber holes in the bottom area or in other areas where water may collect shall be welded all around to seal faying surfaces.
- 100-7.3 [RFP] Tanks fitted with filling and drainage arrangements shall be provided with air holes to prevent the formation of air or gas pockets and to provide clear passage to air escape vent pipes.
- 100-7.4 [RFP] Longitudinals, girders and transverse structural members forming the boundary beneath the propulsion and generator engines and reverse/reduction gears shall not be fitted with limber holes in order to limit oil leakages into the bilge area. A pipe plug (installed in a pipe collar) shall be fitted at the low point of the closed area to permit draining.

100-8 [RFP] Fairness

- 100-8.1 [RFP] Fairness shall comply with [NAVSEA 0900-LP-060-4010](#), Change 2, Figures 12-4 and 12-5 for steel and Figures 12-6 and 12-7 for aluminum. Fairness requirements for FRP structures shall meet the minimum requirements for steel structures. The first figure, for each material type, shall apply to structural bulkheads, walking flats, and tank bulkheads and the second shall apply to shell, main deck, superstructure and enclosures.
- 100-8.2 [RFP] "Panting" or "oil-canning" of any panel in shell, deck house or decks is not permitted. Filling compound shall not be used to compensate for unfairness in the structure. Flame straightening shall not be used to correct unfairness in aluminum.

100-9 [RFP] Construction Tolerances

- 100-9.1 [RFP] Cumulative departure from the hull lines shall be held within the following limits:
- ±25mm (1 in) overall length of the hull
 - ±12mm (0.5 in) in overall beam
 - ±12mm (0.5 in) in depth of the hull
- 100-9.2 [RFP] Any single departure from the hull lines shall be a maximum of ±6mm (0.25 in) normal to the hull surface.

100-10 [RFP] Tightness

- 100-10.1 [RFP] Gunning material, caulking-type material, peening, or paint shall not be used to meet tightness requirements.
- 100-10.2 [RFP] Through bolted attachments on plating forming the boundaries of oil tight structure shall be prohibited. Boundaries of spaces designated for the stowage of oil or flammable liquid containers shall be oil tight.
- 100-10.3 [RFP] Stuffing tubes, flanged joints, and/or stuffing boxes shall be provided to maintain the required tightness of the bulkheads and decks.
- 100-10.4 [RFP] Oil and air stops shall be provided for all drain and air holes which may cause leakage at oil/air boundaries. Oil/air stops shall be provided at tank boundaries (bulkheads, decks and platforms) and longitudinals or stiffeners to prevent oil from crossing oil-tight boundaries by traveling between faying surfaces of continuous structure. Oil stops shall not cause stress concentrations in the structure.

100-11 [RFP] Repairs to FRP Laminates

- 100-11.1 [RFP] No repairs shall be made prior to the Contracting Officer's written approval of the area to be repaired. A repair plan shall be provided that details all of the procedures to make the repair. ([CDRL 100-002](#))

SECTION 110. [RFP] SHELL AND SUPPORTING STRUCTURE**110-1 [RFP] General**

- 110-1.1 [RFP] The keel, keelsons, girders, propulsion engine/reduction gear foundations, bottom longitudinals, and side longitudinals shall be continuous through transverse structures. Collars or flat bar inserts shall be fitted around structure passing through watertight and oil tight bulkheads.
- 110-1.2 [RFP] Tee joints at boundary connections of decks shall have continuous welding on both sides.
- 110-1.3 [RFP] The structural members within the hull bottom or in other areas where water may collect shall have double continuous welds. This shall include keel, keelsons, girders, propulsion engine, and reduction gear foundations to shell plating.
- 110-1.4 [RFP] All aluminum hull members shall be welded continuously on both sides.
- 110-1.5 [RFP] Full penetration welds shall be provided for butts and seams of the bottom shell, side shell, main deck, and transom. Welded joints in the keel, keelsons, girders, propulsion engine/reduction gear foundations, and bottom longitudinals shall be full penetration welds at the webs as well as in the flanges.
- 110-1.6 [RFP] Interference of plating butts and seams with weld traces of structural members that attach to plating shall not be permitted. Butts shall be at least 75mm (2.95 in), but no more than 300mm (11.81 in) from the transverse structure. Seams shall be at least 75mm (2.95 in) from longitudinal elements of the structure.
- 110-1.7 [RFP] The flanges of the bottom, side, and deck longitudinals shall not be connected to the transverse web frames: only web of the longitudinals shall be connected to the transverse web frames to transfer the shear loads. Clips may be used on either one side or both sides of the web to reduce shear stress.

SECTION 120. [RFP] STRUCTURAL BULKHEADS**120-1 [RFP] General**

- 120-1.1 [RFP] Full penetration welds shall be provided for butts and seams of the bulkheads and tanks. Tee joints at boundary connections of bulkheads and tanks shall have continuous welding on both sides.
- 120-1.2 [RFP] For steel structure, attachment of bulkhead stiffeners to plating up to 1m above the baseline and for one-tenth of their length at the opposite end shall be made by double continuous fillet welds.
- 120-1.3 [RFP] For aluminum structure, all attachments of bulkhead stiffeners to plating shall be made by double continuous fillet welds.
- 120-1.4 [RFP] Where wiring trunks, pipe tunnels, or shaft tubes terminate in transverse watertight bulkheads, the ends of such trunks, or tunnels shall be sealed watertight at each such bulkhead. Stuffing tubes, flanged joints, or stuffing boxes shall be provided as necessary to maintain the tightness of the bulkhead and deck.
- 120-1.5 [RFP] Attachments to bulkheads for the purpose of supporting local loads shall not impair the strength or tightness of the bulkhead. Insert and margin plates, additional reinforcing, special framing, or stiffening shall be installed to distribute local stress. Attachments shall be made to the framing and not directly to the bulkhead plating. Flanges of structural members shall not be drilled into for the purpose of attaching supports.

SECTION 130. [RFP] DECKS**130-1 [RFP] General**

- 130-1.1 [RFP] Decks shall be reinforced in way of deck machinery, hatch corners, passing into superstructures within the 0.5L amidships and any other interruptions of the continuous deck. All deck openings shall have rounded corners in accordance with the [ABS HSNC Guide](#).
- 130-1.2 [RFP] For aluminum structure, attachments of deck girders and stiffeners to plating shall be made by double continuous fillet welds.
- 130-1.3 [RFP] In steel hull boats, aluminum decks shall not be used for the main deck and below.
- 130-1.4 [RFP] The decks shall be constructed so that standing water and condensation does not collect under full load condition and minimum operating condition as defined in COR [Section 096](#). Standing water on the deck shall not drain into the bilge.

SECTION 140. [RFP] PLATFORMS AND FLATS**140-1 [RFP] GENERAL**

- 140-1.1 [RFP] In aluminum hull boats, the decks shall be welded. They shall not be riveted or bolted.
- 140-1.2 [RFP] The interior decks shall be constructed so that standing water and condensation does not collect under full load condition and minimum operating condition as defined in COR Section [096](#). Standing water on the deck shall not drain into the bilge.

SECTION 150. [RFP] DECK HOUSE STRUCTURE**150-1 [RFP] General**

150-1.1 [RFP] The deck house structure shall be made of the same material (steel, aluminum, or FRP) as the Parent Craft.

150-2 [RFP] Aluminum

150-2.1 [RFP] Aluminum deck house plating shall join a steel deck using Detacouple or equal explosively bonded aluminum to steel transition joints per COR Section [078](#). The joint shall be mounted at least 50mm (2 in) above the deck on top of flat bar. The width of the joint shall be sized and configured in accordance with manufacturer's recommendations.

SECTION 167. [RFP] DOORS, HATCHES, SCUTTLES AND MANHOLES**167-1 [RFP] General**

- 167-1.1 [RFP] Doors, hatches, scuttles, and manhole covers shall be designed, constructed, and tested to at least the tightness and load requirements of the bulkhead or deck in which they are installed. All watertight doors and scuttles shall be quick acting. All weathertight doors shall be quick acting.
- 167-1.2 [RFP] The rigidity of all closures shall be such as to maintain the gasket surface in a single plane under normal service conditions, to prevent distortion by the dogging operation, and to seat the gasket on the contact edge of the coaming between the dogs, studs, or bolts.
- 167-1.3 [RFP] All watertight closures shall be fitted with retained rubber or neoprene gaskets. The closures and the retaining devices shall be constructed to hold the gasket securely in place.
- 167-1.4 [RFP] Doors throughout the craft shall have rubber tipped metal bumpers installed to protect equipment and light structure, and hooks or other devices to hold doors in fully opened position.
- 167-1.5 [RFP] Watertight doors, hatches, and scuttles shall have rounded knife edges to prevent cutting the gaskets.
- 167-1.6 [RFP] Hinged hatches and scuttles shall have positive devices which will hold the closures in the open position when raised.
- 167-1.7 [RFP] Socket wrenches or dog wrenches, as applicable, shall be provided and stowed adjacent to all closures requiring their use. Wrenches shall be provided for both sides of closures where they may be used from either side.
- 167-1.8 [RFP] Water sheds shall be fitted over all doors and ports opening to the weather.
- 167-1.9 [RFP] All flush weathertight and watertight hatches shall have an installed drain to prevent the accumulation of liquids in the hatch coaming channel. The drain shall keep the hatch coaming channel free from all liquids at all times. The drain shall be piped so as to provide drainage to an exterior location. The drain opening shall be constructed of a corrosion resistant material acceptable for use with the material of which the hatch is constructed, be of the equivalent strength of the boundary it penetrates, and shall meet the structural fire protection requirements of the boundary it penetrates. The drain opening shall be painted, the same as the hatch, where exposure to the weather could occur. In no case shall it be exposed to the possibility of corrosion. The drain opening shall not hamper or impede the ability of the hatch to maintain watertight integrity.
- 167-1.10 [RFP] Scuttles shall have a minimum clear opening diameter of 63.5cm (25 in). Hatches shall have a minimum clear opening of 63.5cm x 63.5cm (25 in x 25 in).

167-2 [RFP] Manholes

- 167-2.1 [RFP] Manholes shall be provided for access to all compartments, tanks, cofferdams, voids, and pockets which are not provided with other means of access. Manhole size shall be a minimum of the dimensions for hatches provided in [ASTM F1166](#) Section 31.9 based upon orientation and shape of opening and clothing required (e.g. bulky, arctic clothing).
- 167-2.2 [RFP] A minimum of one manhole shall be fitted on each tank and void.

- 167-2.3 [RFP] Manholes for tanks shall be bolted, shall be oil tight or watertight, as appropriate, and shall be in conformance with the requirements of COR SECTION 100.
- 167-2.4 [RFP] All manholes and ventilation openings in tanks and voids shall be in the uppermost level of the tank or void.
- 167-2.5 [RFP] Gaskets shall be of elastomeric materials, shall be unaffected by the contents of the tanks on which they are used, and shall be capable of repeated use.

167-3 [RFP] Doors

- 167-3.1 [RFP] Weather tight doors shall be quick-acting type and have clear openings of not less than 0.61m (24 in) wide by 1.68m (66 in) high and hinged on the inboard or forward side. Each of these doors shall be single style, insulated, CRES lock set keyed alike and with window size a minimum of 380mm (15 in) wide by 500mm (20 in) high window.
- 167-3.2 [RFP] Watertight doors shall be quick-acting lever or wheel type with internal dogs and shall be operable from both sides. Each of these doors shall have a clear opening of not less than 0.61m (24 in) wide by 1.52m (60 in) high. Doors used for access to interior passageways shall have a 150mm (5.9 in) diameter clear fixed light. Doors used for deckhouse storage shall not have a clear fixed port light. All watertight doors that are installed on the main deck shall have a minimum sill height of 300mm (11.8in), measured from the main deck to the bottom of the clear opening.
- 167-3.3 [A009] Interior joiner doors shall have a clear opening of not less than 0.66m (26 in) wide by 1.9m (75 in) high and hinged on the inboard or forward side unless otherwise approved by the Contracting Officer. Interior joiner doors for sanitary spaces shall have a clear opening of not less than 0.6096m (24 in) wide by 1.9m (75 in) high and hinged on the inboard or forward side. Hinged doors shall open inward rather than outward into a passageway.
- 167-3.4 [RFP] Compartments protected by fixed fire suppression systems or containing fire suppression material shall be equipped with doors that open outward to allow emergency egress.

167-4 [RFP] Hatches

- 167-4.1 [RFP] All weather hatches on the main deck shall have raised deck coamings. Raised deck coamings for steel weather decks shall be fabricated with CRES 316L. An exception may be made for the access to the forward peak tank. The access to the forward peak tank may be a hinged flush hatch.
- 167-4.2 [RFP] Where wrenches are required, wrenches shall be provided in the vicinity of each hatch.
- 167-4.3 [RFP] Minimum clear opening dimensions of hatches shall be sized based upon shape of opening, orientation and clothing required (e.g. bulky, arctic clothing) in [ASTM F1166](#) Section 31.9. All main deck hatches shall open from the aft to forward direction (i.e. the hinges shall be attached to portion of the hatch facing forward) with the exception of the main forepeak hatch, which shall open from the forward to aft position (i.e. the hinges shall be attached to the portion of the hatch facing aft).
- 167-4.4 [RFP] Escape hatches shall be hinged, and watertight, with minimum clear opening dimensions of hatches shall be sized based upon shape of opening,

orientation and clothing required (e.g. bulky, arctic clothing) in [ASTM F1166](#) Section 31.9.

167-4.5 [RFP] Hatches shall be capable of opening from both sides.

SECTION 170. [RFP] MASTS**170-1 [RFP] General Requirements**

- 170-1.1 [RFP] Masts, spars, staffs, and gaffs shall provide for mounting of navigation and electronic equipment. Arrangements shall minimize interference to the line of sight from the pilothouse and obtain least interference between electronic equipment.
- 170-1.2 [RFP] Fittings and foundations shall be constructed to prevent tearing of flags or rigging.
- 170-1.3 [RFP] Fittings and equipment shall be accessible for maintenance.
- 170-1.4 [RFP] Masts, spars, staffs and gaffs shall be watertight.
- 170-1.5 [RFP] A gaff shall be fitted on the main mast for securing flag halyards.
- 170-1.6 [RFP] A yard shall be fitted on the main mast.
- 170-1.7 [RFP] Fittings shall be attached to the gaff and yard to support the blocks necessary for seven halyards.
- 170-1.7.1 [RFP] Halyards and turning blocks shall comply with COR [Section 613-5](#).
- 170-1.8 [RFP] Masts shall be un-stayed.

170-2 [RFP] Ensign and Jack Staff

- 170-2.1 [RFP] One ensign staff at the stern and jack staff at the bow shall be provided which are suitable for displaying one number 8 size flag. The staffs shall be portable and complete with all necessary fittings. Provisions shall be provided to secure the staffs on deck.

170-3 [RFP] Mast

- 170-3.1 [RFP] Structural Requirements
- 170-3.1.1 [RFP] The mast and supporting structure shall be designed in accordance with [DDS-170-0](#) using the following loads:
- 170-3.1.1.1 [RFP] Wind Load - Wind load based on a 70 knot wind velocity. Wind loading shall be applied to the projected area of each structural component and piece of equipment mounted on the mast.
- 170-3.1.1.2 [RFP] Weight and Dynamic Loads - Weights shall be determined for each piece of structure and equipment and applied to the closest node in the finite element model ([CDRL 085-110](#)). The dynamic load factors shall be applied in the longitudinal, transverse and vertical directions at each node. If a piece of equipment does not mount close to a node then the finite element should be modified to provide a local node. Dynamic loading shall be applied in accordance with [DDS-170-0](#) using the assumptions found in Table 170-1.

Table 170-1

Roll Amplitude	45°
Roll Period	4 seconds
Pitch Amplitude	15°
Pitch Period	2.5 seconds

Heave Acceleration	1 g
Gravity Acceleration	1 g

- 170-3.1.2 [RFP] A factor of safety of 2.5 shall be applied to the welded yield strength of the material in accordance with [DDS-170-0](#).
- 170-3.1.3 [RFP] A buckling analysis shall be conducted in accordance with appendix D of [DDS-170-0](#). The analysis shall consider all resultant axial loads to be compressive since the loads will reverse when applied in the opposite direction.
- 170-3.1.4 [RFP] The mast shall not be capable of excitation from synchronous boat motions, propeller forces and hull structure induced excitation as given in [DDS-170-0](#), section 170-0-g. A vibration analysis of the mast shall be provided to ensure that the requirements for vibration as stated in section 170-0-g of [DDS-170-0](#) are met. ([CDRL 085-110](#))
- 170-3.1.5 [RFP] The mast structure and supporting structure shall be analyzed using a nationally recognized Finite Element Analysis software package such as ANSYS, ALGOR, or NASTRAN. ([CDRL 085-110](#))
- 170-3.1.5.1 [RFP] The analysis shall be conducted for each of the following cases, which are similar to those shown [DDS-170-0](#), Figure 2.
- Case 1 - Roll applied from the side combined with the wind loads applied from the side and pitch loads applied in the fore and aft direction.
- Case 2 - Roll applied from the side combined with the wind loads applied from the bow and pitch loads applied in the fore and aft direction in the same direction as the wind.
- Case 3 - Roll applied from the side combined with the wind loads which are perpendicular to the side face of the mast and the pitch loads in the fore and aft direction.
- 170-3.2 [RFP] Heave (vertical) loads shall be combined with each of the cases as described by [DDS-170-0](#) and with [DOD-STD-1399, Section 301A](#), "Ship Motion and Attitude." In general, the loads shall be combined to create the greatest load on the mast structure and supporting structure.

SECTION 180. [RFP] FOUNDATIONS**180-1 [RFP] General Requirements**

- 180-1.1 [RFP] Strength and rigidity of foundations shall be suitable to withstand all the design loads and distribute such loads into the structure. The design shall include the following:
- 180-1.1.1 [RFP] Weights of machinery and equipment, including liquids at operating levels, and one-half of the unsupported lengths of connected piping and cables.
 - 180-1.1.2 [RFP] Loads resulting from motions and attitudes specified in COR [Section 070](#).
 - 180-1.1.3 [RFP] Vibration of machinery including main propulsion and generator engines, drive train, and propulsor as determined from COR [Section 200](#).
 - 180-1.1.4 [RFP] Loads imposed by the operation of the machinery and equipment itself and from connected systems.
 - 180-1.1.5 [RFP] In exposed locations, the loadings caused by ice, snow, wave impact, and wind shall also be included.
 - 180-1.1.6 [RFP] Equipment manufacturer's requirements/recommendations.
- 180-1.2 [RFP] Foundations subject to cyclically repeated or reversed loadings shall be designed to withstand fatigue.
- 180-1.3 [RFP] Foundations shall contain no pockets which can retain liquids except that the main engine foundations shall contain a catch area to prevent leakage of lubricating and fuel oil into the bilges. A removable plug shall be fitted in lieu of drain hole. The plug shall be accessible and shall be located at the lowest practicable drain point.
- 180-1.4 [RFP] Foundations shall be arranged to provide sufficient clearance for servicing and disassembling parts such as circulating pumps, filters, air coolers, pistons, stators, valves, and rotors without dismantling other machinery, structure, or piping.
- 180-1.5 [RFP] All foundations shall be designed and constructed so that positive and accurate alignment of equipment and components can be maintained.
- 180-1.6 [RFP] The rigidity of foundations and supporting structure shall be sufficient to prevent misalignment which would interfere with operation of the machinery and equipment and to preclude excessive vibratory motion or rocking on the foundation.
- 180-1.7 [RFP] The fuel oil transfer pump and diesel generator foundations shall incorporate a drip pan area to prevent fuel and lubricating oil leakage into the bilge area. This drip pan area shall be fitted with a connection to allow for removal of the leakage using the Fast Lube Oil Change System described in COR [Section 540-5](#).
- 180-1.8 [RFP] Attachments and faying surface of all foundations shall be in accordance with the corrosion requirements of COR [Section 078](#).
- 180-1.9 [RFP] All equipment exposed to weather shall be fastened to its foundation with CRES studs, bolts, nuts, and washers. Where CRES fasteners are used with

aluminum structure, nylon shoulder washers and/or gaskets shall be used to completely isolate the two materials. Installations requiring fasteners not made of CRES shall be submitted to the Contracting Officer for approval.

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 200 – Propulsion

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SECTION 200. [A001] PROPULSION PLANT**200-1 [A001] General Requirements**

- 200-1.1 [A001] The FRC-B shall be designed, constructed, certified and classed to the requirements of the [ABS HSNC](#) Guide to meet the classification requirements in COR Section [070](#). Follow-on sections of the COR identify exceptions or additions to the ABS HSNC Guide requirements.
- 200-1.2 [A001] The main propulsion system configuration shall be identical to the parent craft and shall be at least two independent diesel engines, with at least two drive lines and propulsors. The shaft line external of the hull shall be geometrically identical to the Parent Craft.
- 200-1.3 [A010] The contractor shall have overall responsibility for Integration Management and ensuring integration and interface requirements are met for propulsion systems, so that a fully operational, effective, integrated ship control system is delivered. A Single Source Integrator (SSI) shall be used and assigned as the one point of contact responsible for the propulsion system. The SSI shall be the vendor supplying the major components of the propulsion system. The SSI must be an organization that has demonstrated successful past performance in the same capacity on design and construction projects utilizing integrated propulsion plants of equal or greater complexity. Responsibilities of the SSI include analysis; design; oversight of selection, procurement, installation, and alignment; and integration and performance of all elements of the propulsion system. Components and subsystems for which the Propulsion System SSI will be responsible include the following: prime movers; reduction gears; trolling gear (if provided); loiter propulsion system (if provided); clutches; shafting; thrust bearing; shaft bearings and seals; propulsors; as well as propulsion system controls, software, alarms, and monitoring. If an electric loiter propulsion system is provided, the generators shall be included as components which are the Propulsion System SSI responsibility. Additionally, the Propulsion System SSI shall be responsible for specifying design requirements for all propulsion system/vessel interfaces and supporting systems including electrical/electronic interfaces (such as signals and alarms), mechanical interfaces (such as foundations, stern tube, and strut supports), maintenance envelopes, and accessibility. Components included in the propulsion system/vessel interfaces are the combustion air inlet ducting, exhaust system piping, seawater cooling, starting system, fuel oil system, and lube oil system. The Propulsion System SSI shall be responsible for resolving any propulsion system design, installation, or performance issues identified during design, construction, testing, or trials and for ensuring all propulsion system performance requirements specified within this COR are met. Certification shall be provided by the SSI verifying that the installation of all equipment and systems complies with the equipment and component manufacturers' recommendations ([CDRL 200-001](#)).
- 200-1.4 [A004] Propulsion plant power margins shall comply with the high speed craft portion of the U.S. Coast Guard Powering Margin Practices, [ELC 026-01-001](#). If proposed, loiter motors/engines use powering margin for displacement type cutter in a combined plant.
- 200-1.5 [A001] All drive train components shall have continuous power and torque ratings of not less than the full power and torque of the installed engine and shall be capable of transmitting the full power, torque, and thrust of the propulsion

system in the ahead and the astern directions. Supporting calculations and analysis shall be provided necessary to demonstrate that the propulsion system is capable of powering the FRC-B under the conditions specified in COR Section 070.

- 200-1.5.1 [A001] All speeds in the range listed in COR Section 070 shall be obtainable without the need to operate the propulsion plant in an unsteady (clutch in and out) state.
- 200-1.6 [A001] The propulsion system shall permit unlimited freewheeling of any unpowered propulsor while the FRC-B is operated on another propulsor. Provisions shall be made for any required lubrication and cooling in the marine gear, propulsor bearings, and propulsor seals.
- 200-1.7 [A001] The propulsion system of the FRC-B Class Patrol Boat shall be configured so that loss or interruption of ship service electric power for a minimum period of 30 minutes will not affect the performance or control of the propulsion system.
- 200-1.8 [A001] Rotating machinery shall be aligned in accordance with manufacturer's requirements.
- 200-1.9 [A001] Equipment manufacturers shall approve installation plans of all major equipment such as engines, reduction gears, generators, waterjets, and thrusters. Documentation of that approval shall be provided. (CDRL 085-503)

200-2 [A001] Vibration Analysis

- 200-2.1 [A010] The FRC-B's propulsion system shall be free of any critical torsional, longitudinal, and whirling vibrations throughout the operating range, including possible overspeeds in turns and in rough water operations. The propulsion mass elastic system shall not produce vibratory stresses or deflections in excess of those permitted in accordance with ANSI S2.27, SNAME T&R Bulletin 2-29A, and the equipment or component manufacturers' recommendations. Vibration testing shall be conducted in accordance with COR Section 073 and reported in CDRL 073-007.

SECTION 202. [A001] MACHINERY CENTRALIZED CONTROL**202-1 [A001] General**

- 202-1.1 [A001] This section contains the requirements for the Machinery Control Monitoring System (MCMS). The MCMS consists of the equipment used to monitor selected machinery, shipboard alarm systems and damage control alarm system information. MCMS is designed to supervise the operational status of machinery and systems by means of instrumentation, which provides displays of operational parameters and alarms indicating abnormal operating conditions. The primary location for MCMS display of detailed equipment status and alarm information shall be in the Pilot House.

202-2 [A001] Design Standards and Criteria

- 202-2.1 [A001] Where summary alarms/conditions are used, the operator will also be given actual parametric data on the monitored machinery. Additional Machinery and monitoring points are indicated in the [200](#) and [500](#) series COR Sections.
- 202-2.2 [A001] [SOLAS II-1](#), Regulations 31, 46, 47, 48, 49, 50, 51 & 52. The SOLAS automation standards are to be incorporated into the design.
- 202-2.3 [A001] [IEEE-STD-45](#), Clause 9. Marine industry standards for the design and construction of control systems. Table 11 indicates the construction requirements for control system equipment with the exception of vibration.
- 202-2.4 [A001] [46 CFR Part 62](#). This CFR section provides requirements for the automation of vital systems. These requirements are in addition to and compliment previously listed standards.
- 202-2.5 [A001] [IEEE / EIA 12207.2](#) This reference provides software requirements. For all MCMS developed software, a common style guide shall be used for program development. [IEEE / EIA 12207.2](#) shall be utilized as the standard for the software lifecycle support process and software development acquirer-supplier agreement.
- 202-2.6 [A001] [IEEE 1012](#): Independent verification and validation of software shall comply with [IEEE 1012](#).
- 202-2.7 [A010] [NSTISSAM TEMPEST/2-95](#): MCMS equipment and cabling shall meet the spacing requirements in NSTISSAM TEMPEST/2-95 to prevent TEMPEST violations with other systems.

202-3 [A001] General requirements

- 202-3.1 [A001] The MCMS will provide main propulsion (monitoring only), auxiliary, ships service and emergency electrical distribution system control and monitoring.
- 202-3.2 [A001] The MCMS operates on the basis that the propulsion and auxiliary machinery spaces are periodically unmanned.
- 202-3.3 [A001] The MCMS shall provide a centralized data acquisition and display system. The MCMS shall also be accessible through network communication in the messdeck and EPO Stateroom:
- 202-3.4 [A001] During propulsion plant operation, MCMS shall continuously monitor all important parameters, such as temperatures, pressures, flows and liquid levels.

The system shall have the ability to store one month of data in a format that can be transferred by removable media.

- 202-3.5 [A001] The MCMS shall monitor and display all IC Alarm System information as described in COR [Section 436](#). The MCMS shall be capable of importing all IC System Alarm signal data.
- 202-3.6 [A001] The MCMS shall be capable of exporting data to the Inport Security System.
- 202-3.7 [A001] As much as practicable, a fault in the visual alarm circuits is not to affect the operation of the audible alarm circuits.

SECTION 233. [A001] PROPULSION DIESEL ENGINES**233-1 [A001] General Requirements**

- 233-1.1 [A001] Each engine shall be a non-reversible self-contained marine diesel with individually replaceable cylinder liners. The primary propulsion engines shall be of identical make and model to each other, except for placement of controls and external components.
- 233-1.1.1 [A001] Engine maintenance envelopes recommended by the engine manufacturer shall be identified in the Main Machinery Arrangement Drawing (CDRL 085-200). Deviations, if any, shall be identified and approval of deviations will be at the discretion of the Contracting Officer.
- 233-1.2 [A001] The propulsion engine model shall be a current production model and operated in commercial marine, naval service, or U. S. Government marine service.
- 233-1.3 [A001] Propulsion diesels shall be capable of operation under the environmental conditions described in COR Section 070. Provisions shall be made for both starting and steady-state operation of prime movers per the Section 070 ambient design weather conditions. Minimum engine room starting temperatures, conditions, and mitigating hardware or procedures shall be provided to the Coast Guard. (CDRL 085-210)
- 233-1.4 [A001] The rated power shall be attained under the following conditions:
- 233-1.4.1 [A001] Atmospheric pressure: 1 bar (15 psia).
- 233-1.4.2 [A001] Air inlet temperature: 38°C (100°F) combustion air is ducted directly from outside the engine compartment (see COR Section 251-1.1).
- 233-1.4.3 [A001] Sea water inlet temperature: 32°C (90°F).
- 233-1.4.4 [A001] Exhaust system back pressure - 3.4 kPa (0.49 PSI).
- 233-1.4.5 [A001] Where engine ratings require adjustments for inlet conditions the formulas of ISO 3046/1 shall be used.
- 233-1.5 [A001] Requirements of the ABS HSNC Guide and ABS Naval Vessel Rules (NVR) as modified by the Coast Guard Appendix shall apply to propulsion diesel engines as appropriate based upon their power rating.

233-2 [A001] Propulsion Plant Rating

- 233-2.1 [A004] The propulsion engines shall be rated to allow the FRC-B to meet the performance requirements listed in COR Section 070 as defined for high speed craft in the U.S. Coast Guard Powering Margin Practices, ELC 026-01-001.
- 233-2.1.1 [A001] The FRC-B shall be capable of operating continuously at Flank Speed, limited only by the availability of fuel and/or duration of the mission.
- 233-2.2 [A010] The engines shall be certified to the ABS HSNC Guide and/or NVR within two years of the manufacturer's first production model date or by the factory acceptance test of the main engines for the second FRC-B, whichever occurs first. Evidence of verification shall be provided to the Government that the engine meets the certification requirements of the ABS HSNC Guide and/or NVR. (CDRL 233-001)

233-2.2.1 [A010] Reserved.

233-2.3 [A001] The propulsion engines shall deliver rated power when operating with diesel fuel in accordance with COR Section 233-6.

233-3 [A001] Emissions

233-3.1 [A001] The FRC-B class diesel engines shall be certified to meet Environmental Protection Agency (EPA) Tier II exhaust emissions requirements.

233-3.2 [A001] Loiter diesel engines, if supplied, shall be certified to meet applicable EPA exhaust emission requirements that are in effect at Contract signing for the cylinder displacement and power rating of that marine engine.

233-3.3 [A001] Evidence of testing to verify compliance that the FRC-B propulsion engine meets the above emissions requirements shall be submitted to the Contracting Officer. ([CDRL-233-002](#))

233-4 [A001] Engine Lubricating Oil System

233-4.1 [A001] The Main Diesel Engines, Auxiliary Diesel Engines, and reduction gears shall be capable of operation using a single lubricating oil without adverse effects on maintenance, warranties, or performance, and shall be manufacturer approved.

233-4.2 [A001] Each engine shall be supplied with an integral oil sump.

233-4.3 [A001] Each engine shall be equipped with a lube oil strainer on the suction side of the pump and full flow filter(s) on the discharge side. The filter(s) shall be conveniently located to facilitate filter changes. Elements shall conform to engine manufacturer's specifications. A relief system shall be provided external to the filter casing. The relief system shall bypass oil around the filter(s) if the filter(s) becomes clogged.

233-4.4 [A001] The engine shall be equipped with a crankcase ventilation system to dissipate through the engine's intake system all fumes generated by the engine in the crankcase. The system shall pass crankcase vapors through a separation device and shall maintain crankcase pressure within manufacturer's recommended limits under all normal load and speed ranges. Oil shall be returned to the sump.

233-4.5 [A001] Each engine shall be equipped with a supplemental engine mounted centrifugal lubricating oil filter. The centrifugal filter shall use engine lubricating oil pressure for operation and include provisions to prevent back flow. The oil from the centrifugal filter will return to the engine sump.

233-4.6 [A001] A lubricating oil change shall be performed on the main engines prior to delivery.

233-5 [A001] Cooling System

233-5.1 [A001] Each engine shall be cooled by means of a closed, self contained, fresh water system in which the jacket water is circulated by means of an attached engine driven pump. Seawater shall be circulated through the jacket water heat exchanger by means of an attached seawater pump.

233-5.2 [A001] Jacket water cooler - The jacket water cooler shall be capable of maintaining jacket water and lubricating oil temperatures within the manufacturers recommended range for standard conditions at all loads up to 100% rated load, when operating with seawater inlet temperatures as required in

COR Section 070. Coolers shall be of the removable bundle, floating tube sheet design or of the plate cooler design.

- 233-5.3 [A001] Each engine jacket water system shall be provided with an electric heating system to maintain the jacket water at a temperature sufficient to allow starting and rapid acceptance of load from a shutdown condition. For the design of the heating system, ambient compartment temperature shall be considered to be 5°C (41°F).
- 233-5.4 [A001] Jacket water conditioner test kits shall be furnished to meet the requirements of United States Coast Guard Naval Engineering Manual, [COMDTINST M9000.6E](#); Chapter 233 and the engine manufacturer.

233-6 [A001] Fuel Oil System

- 233-6.1 [A001] Each engine shall have a fuel oil system configured as follows:
- 233-6.1.1 [A001] Each engine shall be capable of using marine diesel fuel oil in accordance with [MIL-DTL-16884L](#) (F -76), NSN 9140-01-313-7776 (NPD MGO), and [MIL-DTL-5624U](#) (JP-5).
- 233-6.1.1.1 [A001] The propulsion engines shall be capable of running on JP-5 (MIL-DTL-5624U) and Ultra Low Sulphur Diesel (ULSD, less than 15ppm) without adverse effects on engine maintenance, warranties, or performance (apart from reduced power output while running on JP-5).
- 233-6.1.2 [A001] In addition to the fuel injection pumps and injectors, the system for each engine shall include a hand operated priming pump, an engine driven rotary positive displacement type supply pump, a relief valve connected to the discharge side of the pump, a duplex filter-water separator, and the necessary piping, valves and fittings. A duplex pressure gage shall be furnished to indicate the pressure drop across the filter-water separator. The fuel system shall be capable of operating with a 3m (9.8 ft) static suction lift.

233-7 [A001] Exhaust System

- 233-7.1 [A001] Each engine's exhaust system shall meet the requirements below: (See COR SECTION 259 for system requirements)
- 233-7.2 [A001] The exhaust headers shall be water cooled, water blanketed or heat shielded. Headers made in sections will be acceptable. Provisions shall be made at the low points in the header for draining the gas space of the header from either end.

233-8 [A001] Starting System

- 233-8.1 [A001] A starting system shall be provided for each engine. The starting system shall be either air or electric. If an electrical starting system is provided it shall also comply with [IEEE-STD-45](#), section 7.3.8, "Engine starters" for electric starting systems.
- 233-8.2 [A001] If an electric battery system is used, it shall operate on 24 volt DC.
- 233-8.3 [A001] Port and starboard starting battery banks, if fitted, shall have a permanent cross connection and selector switch to allow either engine to be started from either battery bank without affecting the operation of the other engine.

233-9 [A001] Governor

233-9.1 [A001] An electronic fuel control system shall be provided.

233-10 [A001] Emergency Shutdown Device

233-10.1 [A001] For engines with rated power greater than or equal to 375KW (500HP) see [NVR 2-2-1](#). For engines with rated power less than 375KW (500HP) and greater than or equal to 100KW (135HP) see COR Section 233-10.2.

233-10.2 [A001] Each engine shall be provided with an emergency shutdown device, operable by a pull cable, which will shut off combustion air to the engine. The pull cable shall be operable from both the pilothouse and a location adjacent to the primary access to the engine compartment. The pull cable shall have a maximum pull tension of 44N (10 lbf). The device shall require manual reset before the engine can be restarted. The emergency shutdown shall be independent of the normal stop mechanism. The materials used in the device shall be selected for resistance to fire damage so as not to be consumed or rendered unserviceable by fire. A label plate shall be installed adjacent to the operating handle identifying its function. The label plate shall be inscribed as follows:

WARNING
EMERGENCY ENGINE AIR SHUTDOWN
(Identify the engine served)
FOR EMERGENCY USE ONLY

233-10.3 [A003] An electronic emergency shutdown device may be installed but it may not take the place of the mechanism required in COR Section 233-10.2 above.

233-10.4 [A010] Where the emergency shutdown device such as the air shutoff valves is not considered necessary for the manufacturer's engine design arrangement, special consideration will be given to the equivalent alternative arrangement without air shutoff valves such as engines fitted with electronically controlled fuel injection systems which are determined suitable by the ABS. A justification for technical determination (JTD) such as failure modes and effects analysis (FMEA) for the proposed arrangement shall be submitted by the manufacturer to the ABS for approval. FMEA or other analysis shall consider all possible malfunctions of lube and fuel oil systems and the multiple failures of engine components subjected to wear and control systems, such as air manifold, fuel intake via filters, injector controller, cylinder cover, piston, turbocharger, electronic control unit (ECU) and local operating panel (LOP) etc., to ensure that there is no risk to the safe operation of the engine without the air shutoff valves.

233-11 [A001] Shields and Guards

233-11.1 [A001] For engines with rated power greater than or equal to 375KW (500HP) see [NVR 2-2-1](#). For engines with rated power less than 375KW (500HP) and greater than or equal to 100KW (135HP) see COR Sections 233-12.2 and 233-12.3.

233-11.2 [A001] Flange shielding shall be provided on all non-welded connections on fuel and lube oil systems (e.g., flanges), including but not limited to valves, filters, strainers.

233-11.3 [A001] Shields and guards shall be provided to protect personnel from contact with hot surfaces and moving parts.

233-12 [A001] Gauges, Alarms, and Controls

- 233-12.1 [A001] In addition to the gauges, alarms, and controls required by ABS, the air manifold pressure and temperature indications shall also be provided for the main engines.
- 233-12.2 [A003] Local controls for starting, stopping, and speed regulation shall be mounted on the instrument panel. The instrument panel shall also contain controls for manually starting and stopping the keep-warm and pre-lube oil systems. No two compartment-wide visual alarms (i.e. strobe lights) for different systems in the same compartment may have the same light lens color. Local operating panel instrumentation for both the main and loiter diesel engines (if provided) shall meet the requirements of [ABS NVR 2-2-1 Table 3](#).
- 233-12.3 [A001] Each engine shall be caused to shut down on conditions of low lubricating oil pressure. Shut down shall occur only after an alarm has sounded and the condition causing the alarm has degraded further. Each engine shall be equipped with a master manual override switch to prevent shut down due low lubricating oil pressure, but this override shall not prevent alarm actuation.
- 233-12.4 [A001] The following gauges and controls (for each propulsion engine) shall be provided on the helm console:
- 233-12.4.1 [A001] Lubricating Oil Pressure
 - 233-12.4.2 [A001] Lubricating Oil Temperature
 - 233-12.4.3 [A001] Jacket Water Temperature
 - 233-12.4.4 [A001] Exhaust Temperature
 - 233-12.4.5 [A001] Engine Start
 - 233-12.4.6 [A001] Engine Stop
 - 233-12.4.7 [A001] Tachometer
 - 233-12.4.8 [A014] Propeller Pitch Indicator (if a CPP system is provided).
- 233-12.5 [A001] If integrated electronic gauges and controls are provided, they shall be provided by the engine manufacturer or shall be approved by the engine manufacturer for use with their engines.

233-13 [A001] Identification and Marking

- 233-13.1 [A001] For engines with rated power greater than or equal to 375KW (500HP) see [NVR 2-2-1](#). For engines with rated power less than 375KW (500HP) see COR Sections 233-13.2, 233-13.3, and 233-13.4.
- 233-13.2 [A001] Each engine, components, and parts shall have markings for identification. An identification plate shall be located on the engine block near the controls. A plate with an arrow showing the direction of rotation shall be secured to the engine block at the flywheel end of the engine and at the free end of the engine.
- 233-13.3 [A001] Each engine identification information plate shall be engraved, etched, stamped, or embossed on corrosion resisting material. The following items shall appear on the nameplate:
- 233-13.3.1 [A001] Name of manufacturer
 - 233-13.3.2 [A001] Engine model

233-13.3.3 [A001] Engine serial number

233-13.3.4 [A001] Rated horsepower

233-13.3.5 [A001] Rated RPM

233-13.4 [A001] The flywheel rim or other rotating parts of large diameter attached to the crankshaft shall be marked to permit checking of the valve and injection pump timing.

233-13.5 [A001] Components such as pumps, coolers, governors, and other such items shall be provided with nameplates that show: manufacturer's name, type, part number, or model.

233-14 [A001] Materials

233-14.1 [A001] Magnesium alloys shall not be used. Aluminum parts shall be protected from chemical and electrolytic action.

233-15 [A001] Barring Device

233-15.1 [A001] Each engine shall be equipped with a manually operated barring device to allow for engine rotation for the purposes of setting valves, checking alignment or any other operation requiring manual engine rotation. The device may be permanently attached to the engine or it may be bolted in place when its use is necessary.

233-16 [A001] Special Tools

233-16.1 [A014] One set of special tools shall be delivered to each FRC-B for each engine model installed. Each set provided shall include all of the required or recommended tools for minor repairs, adjustments, tune-ups, and top-end engine overhauls.

233-16.1.1 [A014] A total of four sets of special tools required or recommended to perform complete engine overhauls shall be provided. These tools shall be delivered to the PRO.

233-16.2 [A001] If an electronic control and alarm system is provided that uses a computer and software for troubleshooting, that software and a compatible laptop computer shall be provided along with all required connection cables, interfaces, and power cables required.

SECTION 235. [A001] ELECTRIC-DRIVE LOITER PROPULSION SYSTEM**235-1 [A001] General Requirements**

- 235-1.1 [A001] If provided, an Electric-Drive Loiter Propulsion System shall meet the following requirements, including [IEEE-STD-45](#), Clause 31 Electric Propulsion and Maneuvering System.
- 235-1.2 [A001] If a propeller is provided, the Loiter Propulsion System shall be capable of providing propeller thrust in both ahead and astern directions.

235-2 [A001] Loiter Propulsion Power System

- 235-2.1 [A001] An Electric Drive Loiter Propulsion System may utilize a dedicated generator, with a dedicated power bus separate from ships service power. The Loiter Propulsion Generator shall be sized to continuously supply the maximum demand load of the Loiter Propulsion System, if fitted.
- 235-2.2 [A001] Ship Service Generators may be used as the Electric Drive Propulsion power source, provided the ship service power duties of the generator takes precedence over Loiter Propulsion System. A separate and dedicated Loiter System power bus shall be provided and shall not connect to the ships service power bus.
- 235-2.3 [A001] The Emergency Generator shall not be used as the Electric Drive Propulsion power source
- 235-2.4 [A001] Generator redundancy is not required for the Loiter Propulsion Power System.

235-3 [A001] Loiter Propulsion System Motors

- 235-3.1 [A001] The Loiter Propulsion Motors shall be sized to continuously drive the vessel at the minimum design Loiter Speed (10 knots). Under full scale trial conditions, the power required to drive the Loiter Propulsion System at rated motor rpm, shall not exceed the Loiter Propulsion Motor's total continuous rated power. While at 90% of the Loiter Propulsion Motor's continuous power rating, and at trial conditions, the vessel's speed shall not be less than 10 knots.
- 235-3.2 [A001] Two Loiter Propulsion System motors shall be provided.
- 235-3.3 [A001] The Loiter Propulsion System motors shall have continuously variable speed control (from zero motor rpm to motor's rated rpm).

235-4 [A001] Loiter Propulsion Control/Drive System

- 235-4.1 [A001] The Loiter Propulsion Control/Drive System shall meet the applicable requirements of COR Section [314](#).
- 235-4.2 [A001] The Loiter Propulsion Control System shall be continuously rated for the maximum rated power demand of the Loiter Propulsion Control System.
- 235-4.3 [A014] The control system shall provide variable speed control of the Loiter Propulsion System motors and propeller pitch control if needed to operate at loiter speed.
- 235-4.4 [A001] The control system shall be capable of providing the regulation required to control the vessel thrust and direction under all operational, maneuvering, transit, transient, and steady state conditions. The control system shall limit

power, shaft speed, and shaft torque to acceptable levels given any throttle position, direction, and loading condition. The control system shall provide stable operation under all load conditions.

- 235-4.5 [A001] If the vessel uses a propeller, the control system shall accommodate regenerative power flow input to the Loiter Propulsion System from the propulsor during deceleration or propeller shaft reversals.
- 235-4.6 [A001] The control system shall be capable of automatically starting the main diesel engines, preparing them to accept load, and transferring the load from the Loiter Propulsion System motor to the main diesel engines in a bumpless fashion. Once the main diesel engines are ready to accept load (per the main diesel engine manufacturer's recommendations), the transfer of power from the loitering system to the main diesels shall occur instantaneously and without additional operator intervention.

SECTION 241. [A001] PROPULSION REDUCTION GEARS**241-1 [A001] General Requirements**

- 241-1.1 [A001] The reverse/reduction gear and clutch units shall be supplied by the main propulsion engine manufacturer. Each reverse/reduction gear unit shall be identical and shall have power and torque ratings to match the maximum continuous power and torque of the installed engine. The reverse/reduction gear units shall be capable of transmitting full engine rated horsepower both ahead and astern. Provisions shall be made to equalize the steering torque reaction generated by the propulsion system in steady state ahead calm water conditions (e.g. propellers rotating in opposite directions). The reverse/reduction gear units shall control the rotation as viewed from aft looking forward. The gear ratio shall be selected in accordance with the requirements for propeller design.
- 241-1.1.1 [A014] A reverse gear shall be provided for fixed pitch propeller propulsion systems only. For a controllable pitch propeller system, the reduction gear shall accommodate all pitch actuation components necessary to meet the requirements of the [ABS NVR](#).
- 241-1.2 [A001] If the reverse/reduction gear installed is equipped with a trolling valve feature then clutch oil circulating and cooling systems shall be capable of dissipating maximum heat generated by continuous trolling for a period of not less than six (6) hours at maximum slip.
- 241-1.3 [A001] Each reverse/reduction gear unit shall be furnished with a self contained lubricating oil system. The lubricating oil shall meet the requirements of COR Section 233-4.1. The system shall consist of an attached sump, pump(s), filter (s) and cooler (s). Pump(s) shall provide adequate lubrication during all operating conditions including freewheeling of a shaft with its engine secured. An oil-to-water heat exchanger and temperature regulating valve shall be furnished to maintain safe operating temperatures of the lubricating oil during any vessel operation condition.
- 241-1.4 [A001] A lubricating oil change shall be performed on the propulsion reduction gears in conjunction with the main engines' lubricating oil change required prior to delivery in COR Section 233-4.6.
- 241-1.5 [A001] If a loitering engine/motor is provided, the reduction gear shall be designed to accommodate power input from said prime mover in a combined arrangement. Means shall be provided to prevent motoring of the loitering prime mover by the main propulsion engine. Engagement/disengagement of main propulsion and loitering prime mover shall be accomplished without having to stop the propulsion shafts.

241-2 [A001] Minimum Rating

- 241-2.1 [A010] The reverse/reduction gear units shall be a current production model and operated in commercial marine, naval service, or U.S. Government marine service at a rating equal to or in excess of the required engine rating.

241-3 [A001] Gauges and Alarms

- 241-3.1 [A001] Instrumentation shall be supplied and installed on the engine instrument panel. This instrumentation shall include but need not be limited to the following:
- 241-3.1.1 [A001] Reduction Gear Lubricating Oil Pressure Gauge

241-3.1.2 [A001] Reduction Gear Lubricating Oil Temperature Gauge

241-3.2 [A001] The following alarm (for each reduction gear) shall be provided on the engine instrument panel and the helm console:

241-3.2.1 [A001] Reduction Gear Low Lubricating Oil Pressure Alarm

SECTION 242. [A001] COUPLINGS**242-1 [A001] General**

242-1.1 [A001] Coupling information shall be provided in accordance with [ISO 4863](#) ([CDRL 085-210](#)).

SECTION 243. [A001] PROPULSION SHAFTING**243-1 [A001] General**

- 243-1.1 [A001] The propulsion shafting arrangement shall meet the Parent Craft definition of this contract. Underwater appendages and shaft lines exterior to the hull shall be identical in location and type to those of the Parent Craft. Modifications are permitted to propeller shaft diameter and any consequent revised dimensions of shaft barrels and struts.
- 243-1.2 [A001] Propulsion shafting and related equipment shall meet the standards and practices in [ABS NVR 2-4-1](#) including the [Coast Guard Appendix](#).
- 243-1.2.1 [A003] The shock requirements in NVR are not applicable.

243-2 [A001] Design

- 243-2.1 [A001] A shaft design analysis shall be submitted in accordance with [CDRL 085-210](#). The design analysis shall include evaluation of the strength, vibration and alignment characteristics of the shaft and related equipment. The design analysis shall include calculations and evaluations of strength, alignment, and vibration (lateral, torsional, and axial).
- 243-2.2 [A014] Plans and particulars of the propulsion shaft shall be submitted in sufficient detail for the Coast Guard to reproduce the parts ([CDRL 085-202](#)). An example of sufficient detail is provided in Coast Guard drawings [901-WMEC-243-1](#) and [901-WMEC-243-4](#).
- 243-2.3 [A014] Fixed Pitch Propeller Propulsion Shafting.
- 243-2.3.1 [A014] The propeller shaft shall be manufactured of precipitation hardened CRES. The shaft alloy shall be [ASTM A564](#) Type 630, [Aquamet 22HS](#) or equal. Substitutions must be equivalent in (1) chemical composition, (2) physical properties (density, Modulus of Elasticity, and Poisson's ratio) and (3) Mechanical Properties (ultimate tensile, 0.2% tension and torsion, elongation, % reduction in area, Charpy V-Notch, and Rockwell/Brinell Hardness), and shall be approved by the Contracting Officer.
- 243-2.3.2 [A014] A hydraulic nut shall be provided with each propeller shaft. One set of equipment necessary for use with a hydraulic nut to install and remove a propeller or coupling shall be furnished.
- 243-2.3.3 [A014] A propeller nut zinc shall be provided with each propeller shaft.
- 243-2.4 [A014] Controllable Pitch Propeller Propulsion Shafting.
- 243-2.4.1 [A014] The propeller shaft shall be manufactured of forged steel or rolled bars and shall comply with the [ABS NVR](#). Shaft size shall also comply with the [ABS NVR](#).
- 243-2.4.2 [A014] The shaft shall be coated with a glass reinforced plastic coating in accordance with [MIL-STD-2199](#).
- 243-2.4.3 [A014] The shaft flange for connection to the forward face of the controllable pitch propeller hub shall meet the requirements of the [ABS NVR](#).
- 243-2.5 [A014] Reserved.

243-3 [A001] Shaft Locks

- 243-3.1 [A001] One shaft locking device for each propeller shaft shall be provided. The devices shall be adequate to hold the shaft while operating from full ahead to full astern on the remaining shaft(s).

243-4 [A001] Alignment

- 243-4.1 [A001] An alignment design report ([CDRL 085-210](#)) and survey reports ([CDRL 243-001](#)) shall be submitted. The alignment design report shall be submitted prior to the survey report. The alignment design report shall consider the effects of bearing wear-down, thermal growth, and hull flexure to determine the optimal bearing offsets. The alignment design report shall also include a table of influence coefficients, straight-line alignment, optimal alignment bearing reactions, and the drydock bearing offsets. The alignment survey report shall provide the actual alignment procedures and readings.
- 243-4.2 [A001] In addition to the alignment processes and procedures performed by the contractor during the construction process, the propulsion shaft to engine/reduction gear alignment shall be verified after the completion of Preliminary Acceptance Trials and before delivery of the vessels to the Coast Guard. The verification shall be conducted in accordance with the processes outlined by engine manufacturer. If necessary, adjustments shall be made to obtain the tolerances identified in the report. Upon completion of the verification, a written report shall be provided to the Coast Guard reporting the final reading per [CDRL 243-002](#).

243-5 [A001] Manufacturing

- 243-5.1 [A001] A report shall be submitted documenting the manufactured shafting run-out values ([CDRL 243-003](#)).
- 243-5.2 [A001] A report shall be provided documenting testing of the shaft material ([CDRL 243-003](#)).

SECTION 244. [A001] PROPULSION SHAFT BEARINGS**244-1 [A001] General**

- 244-1.1 [A014] The propulsion shaft bearing arrangement shall be identical to that of the Parent Craft. The bearings shall comply with [ABS NVR 2-4-4](#). In addition main thrust bearings shall meet the requirements of [ABS NVR 2-4-2/4.4](#). Commercially available reduction gear/thrust bearing arrangements capable of meeting the rated torque and thrust requirements may be substituted for the arrangement required in [ABS NVR](#).
- 244-1.2 [A001] Integrated reduction gear thrust bearings are acceptable designs provided other provisions of [ABS NVR](#) are met.

244-2 [A001] Bearing Alignment

- 244-2.1 [A001] Bearing alignment shall comply with [ABS NVR 2-4-4](#).

244-3 [A001] Bearing Cooling/Purging

- 244-3.1 [A001] Any water lubricated bearing which does not have both ends exposed to the free water stream outside of the hull shall have a forced seawater supply. Seawater shall be injected into the shaft log at the seal to ensure a positive flow of water through the shaft log. Bearing and seal seawater supplies shall be provided from the engine driven seawater pump. (see [COR Section 233-5](#)). The flow and quality of cooling for stern tube bearings shall comply with bearing manufacturer requirements. Alarms shall be provided to indicate when this flow is not maintained.

244-4 [A001] Mechanical Seals

- 244-4.1 [A001] Shaft mechanical seals shall be provided at each watertight boundary. Shaft mechanical seals shall have a split face and seat allowing for removal and replacement of the mechanical seal while the shaft remains coupled to the reduction gear. The seal face shall have pressure applied for positive sealing. The seals shall be provided with a means to positively stop water leakage seaward of the face and seat to facilitate seal replacement while the vessel remains waterborne. Seals shall be of the appropriate design for the intended application, in accordance with the manufacturer's recommendations. The shaft mechanical seal materials shall be selected to minimize dissimilar metal conditions and prevent electrolysis. A vent shall be provided at the highest point of the water side of the seal to prevent air entrapment. A "come-home" device shall be provided for each vessel to allow the seal to be replaced with a temporary packing gland in the event of the total failure of the mechanical seal.

SECTION 245. [A001] PROPELLERS & WATERJETS**245-1 [A001] General**

- 245-1.1 [A001] The type of propulsor (propellers or waterjets) shall be identical to the Parent Craft, however, if due to another change to the propulsion system, a change to the propellers or waterjets is required, the RFP and the remainder of this COR Section shall apply.
- 245-1.1.1 [A013] If waterjet models with less than two years in marine service are proposed, an extended warranty shall be provided.
- 245-1.1.1.1 [A013] The warranty period shall be for two-years; commencing at preliminary acceptance of the cutter.
- 245-1.1.1.2 [A013] The warranty shall cover all costs (materials, interferences, labor and travel) associated with correcting or replacing equipment should discrepancies be found during the warranty period.
- 245-1.2 [A001] The propeller, waterjet, and related system equipment shall comply with the standards and practices in the [ABS HSN C Guide](#) with the exception that propeller material shall be as specified in COR Section 245-3.1. ([CDRL 245-001](#))

245-2 [A001] Propeller Design

- 245-2.1 [A014] The propeller shall be designed for the maximum continuous speed at trial load displacement defined in COR Section [096-1.9](#) without exceeding the rating of the engine specified in COR Section 233-2. The propellers shall have a minimum clearance of 0.20D from the tip of the propeller to the bottom of the hull, where "D" is the diameter of the propeller. Propellers operating in tunnels are exempt from the minimum tip clearance requirement. The propellers shall be removable from the shaft without removing the rudders. The propeller hub design for a fixed pitch propeller system shall incorporate features that facilitate propeller removal (e.g. threaded holes for a hydraulic puller). The propeller hub design for a controllable pitch propeller system shall allow for propeller blade and blade seal removal while the FRC-B is in the water.
- 245-2.2 [A001] Each propeller shall have a maximum back cavitation of 10% at the maximum continuous speed and shall be free from tip singing. Calculations shall be provided to support the propeller selection. The propeller shall be free of cavitation that will cause thrust breakdown throughout its operating range. ([CDRL 245-001](#)) The propeller shall be free of erosive forms of cavitation (bubble and cloud type cavitation).

245-3 [A001] Propeller Material/Manufacturing

- 245-3.1 [A014] The material for propellers shall be cast of [Nickel Aluminum Bronze UNS No. C95800](#), ABS type 4, or ASTM A743 type CF-3M, CA-6NM, CA-6N, CA-40, CF-8, or CA-15. Propellers shall be manufactured in accordance with the Class S of [ISO 484/2 Part 2](#). The propeller hub shall comply with ABS NVR 2-4-1/14 ([CDRL 245-002](#)). Compliance with [ISO 484/2 Part 2](#) and the material selected shall be verified and presented to the Government ([CDRL 245-003](#)). For a fixed pitch propeller system, each propeller's taper will be blue fit checked for contact area during installation with the propulsion shaft and a report shall be provided to the Government ([CDRL 245-004](#)).

245-4 [A001] Waterjets (if provided)

- 245-4.1 [A001] The waterjet model shall be a current production model and operated in commercial marine, naval service, or U. S. Government marine service at a rating equal to or in excess of the required rating for a period of at least two years.
- 245-4.2 [A010] Tunnels, inlets, and housings if separate shall be approved by the waterjet manufacturer.

245-5 [A001] Propeller Drawings

- 245-5.1 [A001] Plans and particulars, including a 3D model, of the propeller shall be submitted in sufficient detail for the Coast Guard to reproduce the part. ([CDRL 085-203](#)) NAVSEA drawing 803-4435837 shall be used for guidance.

SECTION 251. [A001] COMBUSTION AIR SYSTEM**251-1 [A001] General Requirements**

- 251-1.1 [A001] The combustion air system shall provide each diesel engine with a separate independent weather air intake ducted directly to the air intake for that engine.
- 251-1.2 [A001] The weather air intake opening air velocity shall not exceed 457.2 m/min (1500 fpm). The weather air intake opening shall be fitted with a ½" mesh screen.
- 251-1.3 [A001] Weather (Combustion) air intakes that take suction directly from the exterior of the FRC-B's weather-tight envelope shall be fitted with demisters. Demisters shall be located to minimize ingestion of spray or solid water under all design conditions of COR Section 070 and shall limit down-flooding. Demisters shall be subjected to the testing requirements in COR Section 512 for weather terminals.
- 251-1.4 [A001] The combustion air intakes shall include air intake filters. The sizing of the inlet ducts shall comply with the engine manufacturer's recommendations and the machinery and auxiliary machinery compartment ventilation requirements as specified in COR Section 512. Maximum air temperature in the compartments and maximum air pressure drop through the inlets shall comply with the engine manufacturer's requirements. Air intake filters shall be equipped with a differential pressure indicator which shall remain in the warning position whenever a high differential pressure occurs until manually reset. The engine side of the air intake filter shall be equipped with a normally closed port suitable for the attachment of a water manometer for measuring intake depression. This port shall be labeled as to its intended function. Combination filter-silencers shall be provided as necessary to meet COR Section 073 requirements.
- 251-1.5 [A001] Combustion air ducting shall be galvanized steel or aluminum in accordance with COR Section 512.
- 251-1.6 [A001] Intake ducting flanges shall be sheet steel and structural angles with bolting similar to HVAC systems.
- 251-1.7 [A001] An air filter change shall be performed on the main engines and ship's service diesel generator engines in conjunction with the lubricating oil changes performed prior to delivery.

SECTION 252. [A001] PROPULSION CONTROL SYSTEM**252-1 [A001] General**

- 252-1.1 [A014] Remote control shall be provided at all Command and Control Stations for the propulsion units and shall be single-lever type for each propulsion engine. The levers shall be placed so that they may be conveniently operated with one hand by the helmsman. A single lever shall control the reverse gear, throttle and (if equipped) slow speed, trolling operation, or loiter drive feature, of each propulsion unit. Forward movement of the lever shall produce forward motion of the craft. Each control head shall control the corresponding propulsion engine and reverse/reduction gear. Operation at one station shall not require disabling any other station. The engine speed shall be adjustable to within 10 engine RPM at all lever positions. The remote control system shall be processor based and employ a dual redundant data bus configuration. The remote control of the trolling system shall use a closed-loop feedback system using engine RPM and shaft output RPM for control. If a controllable pitch propeller system is utilized, propeller pitch and engine speed control shall be combined in a single lever that adequately operates the FRC-B throughout the entire speed range. This type of control shall be provided at all command and control stations. A closed-loop feedback control system shall be utilized to achieve the proper engine speed/propeller pitch profile for any ordered speed throughout the FRC-B's operating speed range.
- 252-1.1.1 [A001] For any helm positions, the throttles shall have the capability to be synchronized so that a single throttle lever controls all main propulsion engines.
- 252-1.2 [A001] Propulsion control shall be provided in the engine room for use in the event of loss of control at the primary command and control station.
- 252-1.3 [A001] Controls shall have positive detents for indicating positions of neutral, forward, and reverse positions. The configuration shall allow for quick-disconnect at the engine for local control.
- 252-1.4 [A001] The control system shall provide for accelerating the engine speed when the engine is in neutral. Slow speed operation, if installed, shall be clearly indicated on the control levers by detents or other physical indicators.
- 252-1.5 [A001] The control lever shall increase or decrease the power produced by the engine. Maximum movement of the control lever at the helmsman's position shall provide full rated power position of the engine governor. All parts of the system from the control lever to the engine shall have maximum movement without interference. Throttle boost for astern operation shall be provided if necessary to prevent engine stalling.
- 252-1.6 [A001] The control system shall incorporate delay sequences, boost sequences, interlocks, and other features to comply fully with the propulsion engine and reverse/reduction gear manufacturers' requirements.
- 252-1.7 [A001] Controls for starting and stopping the main engines shall be installed in all command and control stations and the engine room.
- 252-1.8 [A001] If waterjet propulsion is provided, a means to clear the waterjet inlet(s) shall be provided. The method selected shall be approved by the waterjet

- manufacturer. Clearing the waterjet inlet(s) shall not require personnel in the water.
- 252-1.9 [A001] For the MDE control system, indication should be provided in the machinery space, preferably at the principal propulsion control station, to indicate when the emergency generator is operating and when the emergency storage battery is being discharged in accordance with [IEEE-STD-45](#), "Recommended Practice for Electrical Installations on Shipboard", Section 6.1 "General."
- 252-1.10 [A001] The propulsion control system shall have two independent sources of power.
- 252-1.11 [A001] Continuous redundant electrical power sources required for electronically controlled governors. Backup power supply on electronic governors shall provide a minimum of 30 minutes backup power.
- 252-1.12 [A001] The propulsion control system shall have a backup or redundant speed governor.
- 252-1.13 [A001] Alarms and annunciators shall comply with [ISA Standard S18.1](#) "Annunciator Sequence and Specification" 1992.
- 252-1.14 [A001] The hardware shall be commercially available equipment. The system shall use programmable digital controllers and the scan rates shall be at least 10 times faster than the time constant of the associated control. Multiple scan rates are acceptable.
- 252-1.15 [A001] A PC interface and data acquisition system for troubleshooting and performance monitoring shall be provided.
- 252-1.16 [A001] The controller with hot standby system shall comply with ABS "Rules for Building and Classing Steel Vessels", Part 4 "Machinery Equipment and Systems", section 11 and [IEEE-STD-45](#) "Recommended Practice for Electric Installations on Shipboard", section 36 and 37.
- 252-1.17 [A001] The process controller shall include a primary and redundant hot standby (secondary) controller. The primary and secondary controller shall be identical. Either controller shall serve as the primary or secondary controller. Power for the controllers shall be according to [IEEE-STD-45](#), section 37.10 "Control system power supply".

SECTION 256. [A001] PROPULSION AND MACHINERY SEAWATER COOLING SYSTEMS**256-1 [A001] General Requirements**

- 256-1.1 [A001] Propulsion seawater cooling systems shall be installed for each propulsion engine. Each system shall include an engine driven seawater pump, flexible connections to the engine, duplex strainer, sea chest, valves, and other components necessary to meet the requirements of this and other applicable Sections of this COR. The system shall be in accordance with engine manufacturer's requirements. An isolation valve shall be installed in supply line to each pump allowing each engine seawater cooling system to be isolated from the other to repair casualties and complete maintenance actions while the other engine is in operation.
- 256-1.2 [A001] The main propulsion cooling system shall provide cooling water to the propulsion engines, and reverse/reduction gears.
- 256-1.3 [A001] Seawater for each propulsion cooling system shall be supplied through a sea valve mounted on the sea chest. Each sea chest shall be equipped with an intake strainer with an open area equal to at least three times the cross-section area of the seawater suction pipe. The skin valve shall be quick acting, butterfly type with bolted lugs. The sea chest valves shall be provided with zerk fittings for proper lubrication.
- 256-1.3.1 [A001] The openings in the sea chest grate shall be designed to minimize the suction of solid matter, such as grass and ice, into the seawater cooling system.
- 256-1.4 [A010] A seawater strainer shall be installed for each engine between the sea valve and the circulating pump. The strainer shall be located so that it is accessible for servicing and does not obstruct access for maintenance of other equipment. The inlet and outlet shall be located below the circulating pump suction connection. The sea water strainers shall be duplex strainers with a bronze or 90-10 copper-nickel body and a monel or copper-nickel basket.
- 256-1.4.1 [A001] The Strainer and Basket arrangement shall allow for the removal of captured debris with the removal of the basket for quick cleaning.
- 256-1.4.2 [A001] The duplex strainer shall be provided with inlet and outlet pressure gauges. An instruction plate shall be posted at the gauges, specifying the differential pressure at which the strainer basket should be switched or cleaned.
- 256-1.5 [A001] Sacrificial anodes shall be installed in engine cooling system in accordance with manufacturer's recommendations. Zinc anodes shall be in accordance with [MIL-A-18001K\(2\)](#).
- 256-1.6 [A001] A Cathelco (or equal) copper dosing system shall be provided to prevent marine growth in the seawater cooling system. The copper anodes shall be sized appropriately to last for one year between required replacements.
- 256-1.7 [A001] Shell and tube heat exchangers, if provided, shall meet the requirements of [ASME Code Section VIII, Division 1](#).
- 256-1.8 [A001] Titanium is the required material for plate heat exchangers.

- 256-1.9 [A010] Seawater velocity limits for 90-10 Copper-Nickel Seawater Systems shall be in accordance with Table 256-1 for discharge piping.

Table 256-1

90-10 CuNi Class 200 Velocity Limits for Seawater Piping					
Pipe Size (NPS)	Pipe OD (inches)	Thickness (inches)	Pipe ID (inches)	V _{Max} (ft/sec)	Flow _{Max} (GPM)
1/4"	0.540	0.065	0.410	3.20	1.32
3/8"	0.675	0.065	0.545	3.69	2.69
1/2"	0.840	0.065	0.710	4.21	5.21
3/4"	1.050	0.065	0.920	4.80	9.95
1"	1.315	0.065	1.185	5.44	18.73
1 1/4"	1.660	0.072	1.516	6.16	34.68
1 1/2"	1.900	0.072	1.756	6.63	50.08
2"	2.375	0.083	2.209	7.43	88.88
2 1/2"	2.875	0.083	2.709	8.23	148.02
3"	3.500	0.095	3.310	9.10	244.28
3 1/2"	4.000	0.095	3.810	9.76	347.23
4"	4.500	0.109	4.282	10.35	464.97
5"	5.563	0.125	5.313	11.52	797.37
6"	6.625	0.134	6.357	12.00	1188.57
8"	8.625	0.148	8.329	12.00	2040.36
10"	10.750	0.187	10.376	12.00	3166.51
12"	12.750	0.250	12.250	12.00	4413.60
Notes:					
<ul style="list-style-type: none"> • Velocity limits for 70-30 CuNi tubing can be increased by 2 fps. • Minimum recommended seawater velocity for any size tubing is 3 fps. 					

- 256-1.10 [A010] Seawater velocity limits for 90-10 Copper-Nickel Seawater Systems shall be in accordance with Table 256-2 for suction piping.

Table 256-2

90-10 CuNi Class 200 Velocity Limits for Seawater Piping					
Pipe Size (NPS)	Pipe OD (inches)	Thickness (inches)	Pipe ID (inches)	V _{Max} (ft/sec)	Flow _{Max} (GPM)
1/4"	0.540	0.065	0.410	1.92	0.79
3/8"	0.675	0.065	0.545	2.21	1.61
1/2"	0.840	0.065	0.710	2.53	3.12
3/4"	1.050	0.065	0.920	2.88	5.97
1"	1.315	0.065	1.185	3.27	11.24
1 1/4"	1.660	0.072	1.516	3.69	20.81
1 1/2"	1.900	0.072	1.756	3.98	30.05
2"	2.375	0.083	2.209	4.46	53.33

2 1/2"	2.875	0.083	2.709	4.94	88.81
3"	3.500	0.095	3.310	5.46	146.57
3 1/2"	4.000	0.095	3.810	5.86	208.34
4"	4.500	0.109	4.282	6.21	278.98
5"	5.563	0.125	5.313	6.91	478.42
6"	6.625	0.134	6.357	7.56	749.19
8"	8.625	0.148	8.329	8.66	1472.12
10"	10.750	0.187	10.376	9.66	2549.98
12"	12.750	0.250	12.250	10.50	3861.90

256-1.11 [A010] A computer flow analysis of multiple worst case conditions shall be provided. Pump selection analysis shall be provided. (CDRL 085-510)

256-1.12 [A010] Reserved.

256-2 [A001] Machinery Seawater Cooling System

256-2.1 [A001] The machinery seawater cooling system shall supply cooling water to the A/C plants, provide flushing water for the stern tube bearings and seals, the oily water separator, and other systems as required.

256-2.2 [A001] The requirements of COR Sections 256-1.9 thru 256-1.12 apply to the machinery seawater cooling system. The computer flow analysis required in 256-1.11 can be combined into one analysis. (CDRL 085-510).

256-2.3 [A001] The system shall take suction from the main propulsion sea chest header.

256-2.4 [A001] Seawater Cooling Pumps.

256-2.4.1 [A001] The system shall include dual seawater cooling pumps each capable of providing the required seawater cooling/flushing capacity. The second pump is provided for redundancy. Calculations shall be provided demonstrating that the pumps meet the required capacity (CDRL 085-510).

256-2.4.2 [A001] The cross-sectional area of each pump's suction piping shall be equal to or greater than the cross-sectional area of the associated pump nozzle, however, it may be less, provided that the combination of size and configuration ensures that pump operation meets the design requirements of the system served.

256-2.5 [A001] Seawater Cooling Piping shall comply with COR Section 505 and as noted below:

256-2.5.1 [A001] Cutout valves shall be installed on the suction and discharge side of both pumps to allow for servicing/removal of a pump with the system in operation. In addition, a check valve shall be provided in the discharge piping for each pump, immediately upstream of the discharge cutout valve.

256-2.5.2 [A001] A pump recirculating line sized for 5% of the associated pump's rated flow capacity shall be provided for each pump and shall discharge overboard via an orifice, overboard discharge hull valve, and overboard connection.

256-2.5.3 [A001] Recirculating lines may be combined upstream of the overboard discharge valve, provided each individual recirculating line is provided with a check valve and cutout valve upstream of any junction.

- 256-2.5.4 [A001] A thermometer shall be installed in the seawater cooling main in each machinery space (see COR Section 504).
- 256-2.5.5 [A001] Each seawater cooling pump shall be provided with a compound suction gauge and a discharge pressure gauge (see COR Section 504).
- 256-2.5.6 [A001] A pressure switch shall be provided immediately downstream of each pump to provide remote indication of low pump discharge pressure. The pressure switch shall provide remote indication in MCMS (COR SECTION 202).
- 256-2.6 [A001] A single duplex seawater strainer shall be installed between the sea chest header and both pump suctions. The strainer shall be located so that it is accessible for servicing and does not obstruct access for maintenance of other equipment. The inlet and outlet shall be located below the cooling pump suction connection(s). The sea water strainer shall be duplex with a bronze or 90-10 copper-nickel body and a monel or copper-nickel basket.
- 256-2.6.1 [A001] The strainer and basket arrangement shall allow for the removal of captured debris with the removal of the basket for quick cleaning.
- 256-2.6.2 [A001] The strainer shall be provided with an inlet and outlet pressure gauges and an instruction plate shall be posted at the gauges, specifying the differential pressure at which the strainer basket should be switched or cleaned (see COR Section 504).
- 256-2.7 [A001] A Cathelco (or equal) copper dosing system shall be provided to prevent marine growth in the seawater cooling system. The copper anodes shall be sized appropriately to last for one year between required replacements.
- 256-2.8 [A001] Back-up seawater to the seawater cooling system shall be provided from the firemain via a pressure reducing station sized for the same capacity as a seawater cooling pump. The reducing station does not require a by-pass.
- 256-2.9 [A001] The A/C Plant Condenser cooling system(s) shall comply with COR Section 516 and as noted below.
- 256-2.9.1 [A001] A water failure control switch, a wye type strainer, and a cutout valve shall be provided for each A/C plant condenser (see COR Section 516). A pressure gauge shall be provided in the common seawater supply line.
- 256-2.9.1.1 [A001] The strainer basket perforations shall be sized smaller than the smallest flow passage in the equipment. The total clear area of basket perforations shall be not less than three times the area of the strainer discharge connection. In order to avoid rapid and unnecessary clogging of the strainers, strainer perforations shall be no smaller than one half the size of the smallest flow path served.
- 256-2.9.1.2 [A001] The water failure control switch shall provide remote indication in MCMS (COR SECTION 202).
- 256-2.9.2 [A001] A pressure gauge, thermometer, and regulating valve shall be installed in the discharge from each condenser.
- 256-2.9.2.1 [A001] The regulating valve shall be a three-way valve installed in the mixing configuration to allow excess seawater to bypass the condenser. The bypass line shall have a flow control device installed to limit flow to the maximum condenser flow rate.

- 256-2.9.3 [A001] Condenser head vents, where required, shall be provided with a cutout valve.
- 256-2.9.4 [A001] The overboard discharge from the a/c plant shall be located in the same watertight subdivision and shall be combined where practicable to minimize the number of hull penetrations (see COR Section 505).
- 256-2.9.4.1 [A001] The overboard discharge shall be located at least 30.5cm (1 ft) below the minimum operating draft.
- 256-2.10 [A001] Seawater to the propulsion shaft seals and stern tubes shall be supplied from the seawater cooling system.
- 256-2.10.1 [A001] A wye strainer, flow switch, globe valve, pressure gauge, and drain valve, in that order, shall be provided in the seawater supply piping to each shaft seal and stern tube.
- 256-2.10.1.1 [A001] The strainer basket perforations shall be sized smaller than the smallest flow passage in the equipment. The total clear area of basket perforations shall be not less than three times the area of the strainer discharge connection. In order to avoid rapid and unnecessary clogging of the strainers, strainer perforations shall be no smaller than one half the size of the smallest flow path served.
- 256-2.10.2 [A001] The flow switch shall provide remote indication in MCMS for low seawater supply pressure (COR SECTION 202).
- 256-2.11 [A001] A pressure reducing station shall be provided for each service or subsystem requiring water at reduced pressure.
- 256-2.11.1 [A001] Pressure reducing stations shall provide automatic means of regulating outlet pressure.
- 256-2.11.2 [A001] Pressure gauges for monitoring both the inlet and outlet pressure shall be provided (see COR section 504).
- 256-2.11.3 [A001] Filtration equipment for particulate protection of the pressure regulators shall be provided, if required.
- 256-2.11.4 [A001] Provision for bypassing the regulator shall be provided.
- 256-2.11.5 [A001] Provision for isolating regulators and filtration equipment shall be provided.
- 256-2.11.6 [A001] Non-isolatable relief valve protection, of downstream piping shall be provided, unless downstream piping and components which could be subjected to full inlet pressure on failure of the regulator have the same design pressure as the inlet piping.
- 256-2.11.7 [A001] Suitable means to bleed pressure out of regulators and filtration equipment shall be provided.
- 256-2.11.8 [A001] Provision for pressurizing relief valves to facilitate setting without readjusting the pressure regulator shall be provided.
- 256-2.11.9 [A001] Bypasses, manual or automatic, except those used exclusively to facilitate relief valve setting, shall be sized to pass system maximum flow requirements.
- 256-2.11.10 [A001] Manual bypasses shall be capable of throttling flow smoothly.

256-2.11.11 [A001] Relief valves shall be sized to pass the larger of the following: 1) Full open regulating valve capacity or 2) Full open manual bypass capacity.

256-2.11.12 [A001] Reducing stations may include flow-limiting orifices.

SECTION 259. [A001] PROPULSION ENGINE EXHAUST SYSTEM**259-1 [A001] General Requirements**

- 259-1.1 [A001] An engine exhaust system shall be installed for each propulsion engine. The system shall be sized in accordance with noise requirements of COR [Section 073](#) and engine manufacturer's requirements. The back pressure imposed on each engine by the exhaust system shall meet the engine manufacturer's requirements. Lacking manufacturer's guidance, the back pressure shall not exceed 500mm (20 in) of water at the rated rpm and horsepower (see COR Section 233-2).
- 259-1.2 [A001] The propulsion engine exhaust system shall be designed such that it does not interfere with small boat operations.
- 259-1.3 [A001] The slope of the exhaust pipe shall provide complete drainage from the engine under all load conditions and arranged to prevent reverse flow of seawater from entering the exhaust system when the FRC-B is running astern or in a seaway.
- 259-1.4 [A001] All un-cooled sections of the exhaust system shall be insulated. Insulation shall be in accordance with [MIL-STD-769J](#). Insulation shall have impervious outer covering and be installed so as to minimize absorption of oil mist.
- 259-1.5 [A001] Dry type spark-arresting marine silencers with soot collectors shall be provided, if required to meet COR [Section 073](#). Collectors shall be easily removable for cleaning.
- 259-1.6 [A001] The exhaust system shall not run through habitable spaces.
- 259-1.7 [A001] The exhaust system shall not permit spray or rain water to enter or collect in the system. Drains are to be provided in exhaust system where water might collect.
- 259-1.8 [A001] Gauges and other fittings shall be provided to permit temperature, smoke and back pressure analysis.
- 259-1.9 [A001] Side exhaust systems shall incorporate an insert plate of CRES 316 in the shell in way of the exhaust exit. The size of the insert plate shall be one diameter minimum of the exhaust pipe diameter around the exhaust pipe.

259-2 [A001] Hot Flex Sections

- 259-2.1 [A001] The exhaust system shall be supported to prevent excessive loading of the ships structure or the flexible connections and expansion joints. Vibration isolators shall be installed in the exhaust support system to absorb engine movement. Flexible sections shall be installed at the engine exhaust outlets to permit the engine to move on its vibration isolators and to prevent loads in excess of those recommended by engine manufacturer being transmitted to turbocharger. The engine end of the flex section shall match turbocharger outlet or flanged connection as required.
- 259-2.2 [A001] Circular metallic bellows type expansion joints shall be in accordance with [ASTM F1120](#). Non-metallic expansion joints shall be in accordance with [46 CFR 56.35](#).

259-2.3 [A001] Expansion joints and exhaust silencers shall be certified gas tight by their manufacturers.

259-2.4 [A009] Combustion equipment connections, silencers and expansion joints shall have flanged pipe connections. Flange bolt drilling shall be to ANSI standards. Bolts shall be in accordance with [MIL-STD-777E](#).

259-3 [A001] Materials

259-3.1 [A001] For temperatures over 400°C (752°F) CRES grades 321 or 347 shall be used. Cooled sections of exhaust system, if applicable, shall be 316L CRES or aluminum 5086, 5456 or 6061, glass reinforced plastic (fire retardant resin) or marine exhaust hose. Hose connections shall be slip-on; each connection secured by two all-CRES worm gear hose clamps. All materials shall be selected as suitable in the event of loss of cooling water.

SECTION 262. [A001] LUBRICATION SYSTEM**262-1 [A001] General Requirements**

- 262-1.1 [A009] Plastic, paint, and zinc coated surfaces in contact with lubricating oil are prohibited, except in cases where it is the manufacturer's standard practice to use such coatings. Note: The lubricating oil requirements for specific applications are provided in the respective COR Sections.
- 262-1.2 [A001] See COR Section [540](#) for lubricating oil storage tank capacity.
- 262-1.3 [A001] Pre-lube pumps shall meet engine manufacturer's requirements.

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 300 – Electrical Systems

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SECTION 300. [RFP] ELECTRIC PLANT, GENERAL**300-1 [RFP] General Requirements**

- 300-1.1 [RFP] This Section sets forth the general requirements for the FRC-B's electrical system including power generation, distribution, conversion and consuming equipment such as lighting, control, power and interior communication, the details of which are covered in other Sections of this COR.
- 300-1.2 [A003] The FRC-B shall be designed, constructed, certified and classed to the requirements of the [ABS HSNC Guide](#) to meet the classification requirements in COR Section [070](#). Follow-on sections of the COR identify exceptions or additions to the ABS HSNC Guide requirements.

300-2 [RFP] Design Standards and Criteria

- 300-2.1 [RFP] In addition, the complete electric plant (all SWBS 300 series sections) and its equipment shall be in accordance with all of the requirements of [IEEE-STD-45](#), "Recommended Practice for Electrical Installations on Shipboard, and [Title 46, Code of Federal Regulations \(46 CFR\), Subchapter J](#), "Electrical Engineering", unless otherwise specified in the COR.
- 300-2.1.1 [RFP] The recommendations given in the referenced standards shall be interpreted as requirements. Throughout the text of each document, the word "shall" shall be substituted for the words "may" or "should" and the word "required" shall be substituted for the word "recommended".
- 300-2.2 [RFP] Definitions for electrical terms used but not defined in this COR are also found in [IEEE-STD-100](#), "The Authoritative Dictionary of IEEE Standards Terms- Seventh Edition" and [IEC-60092-101](#).
- 300-2.3 [RFP] An electrical system one-line diagram shall be prepared of the ship service and emergency power generation and distribution systems. ([CDRL 085-300](#)) Electrical system one-line diagram shall be in accordance with [NAVSEA S9AA0-AA-SPN-010/GEN-SPEC](#), Section 320j "Technical Documentation".
- 300-2.4 [RFP] The following calculations, analyses, and studies shall be prepared to verify the FRC-B's electrical power generation and distribution system design: (The aforementioned electrical systems studies/analyses shall be prepared using commercial off the shelf (COTS) software compatible with [EasyPower®](#) software, version 7.0.080n. The electrical system shall be mathematically modeled using software compatible with [EasyPower®](#) software, version 7.0.080n. For each analysis, the source code file(s) shall be delivered to the Coast Guard.)
- 300-2.4.1 [RFP] A preliminary system load and power analysis shall also be prepared in accordance with the guidance provided in [DDS 310-1](#), "Electric System Load and Power Analysis for Surface Ships". This analysis shall be prepared to a level of detail required to facilitate estimating space and weight requirements for the major components of the electric plant. ([CDRL 085-312](#))
- 300-2.4.2 [RFP] A System Load and Power Analysis shall also be performed in accordance with the requirements of [NAVSEA S9AA0-AA-010/GEN-SPEC](#), Section 300j "System Load and Power Analysis" (format in accordance with Figure 2). ([CDRL 085-313](#)) Operating condition load requirements shall show winter and summer profiles separately. The ship service loads, as defined in [46CFR, Subpart 111-10.1\(a\)](#), "Power Supply," shall be the basic

operating loads included under each ship operating condition as a minimum. The FRC-B small boat launch and recovery system (required by COR Section 583) shall also be included under each operating condition with the system load factors shown in Table 300-1.

Table 300-1

Operating Condition	Load Factor
Anchor	0.5
Shore	0.5
Cruising	0.1
Functional	0.3
Emergency	0.0

- 300-2.4.3 [RFP] Electric Cable Voltage Drop Calculations shall also meet the requirements of [IEEE-STD-45](#), Section 5 “Power System Design”. Calculations shall be determined by software compatible with [EasyPower®](#) software, version 7.0.080n. [MIL-HDBK-299\(1\)](#), “Data Pertaining To Electric Shipboard Cable” shall be used for guidance. ([CDRL 085-313](#))
- 300-2.4.4 [RFP] Fault Current Analysis in accordance with [46CFR, Subchapter J](#) Electrical Engineering. The format shall be in accordance with [IEEE-STD-141-1993](#) “IEEE Recommended Practice for Electric Power Distribution for Industrial Plants, Red Book”, [ANSI/IEEE Standards C37 series](#) that apply. The fault current analysis shall be performed to calculate the short circuit currents that can be expected at the various points throughout the distribution system. Analysis shall be performed by software compatible with [EasyPower®](#) software, version 7.0.080n. ([CDRL 085-313](#))
- 300-2.4.5 [RFP] Protective Device Coordination Study to graphically verify that protective devices being considered for use provide, over the full potential range of faults, the selectivity required. Format in accordance with [IEEE-STD-242](#), “IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems, Buff Book”. This standard describes the requirements for electrical system protection and coordination to provide for the prevention of injury to personnel, to minimize damage to the system components, and to limit the extent and duration of interruption whenever equipment failure, human error, or adverse events occur on any portion of the system. Coordination study shall be performed using software compatible with [EasyPower®](#) software, version 7.0.080n. ([CDRL 085-313](#))
- 300-2.4.6 [RFP] Electric Cable Voltage Dip Calculations shall also meet the requirements of [IEEE-STD-45](#), Section 11 “Control application”. Calculations shall be determined either by [DDS 311-2](#), “Voltage Regulation of AC Ship Service Electrical Power Systems” or by software compatible with [EasyPower®](#) software, version 7.0.080n. This is performed to calculate the maximum voltage dip expected throughout the distribution system. Voltage dip calculations shall be performed using software compatible with [EasyPower®](#) software. ([CDRL 085-313](#))
- 300-2.4.7 [RFP] [46 CFR Subchapter J](#), “Electrical Engineering”. Provides requirements for the design of electrical systems. This standard compliments the plant and equipment requirements found in [IEEE-STD-45](#). Each ship service diesel

generator (SSDG) shall be suitable to support the complete FRC-B electrical load requirements per the Electric Plant Load Analysis with one SSDG online and the other SSDG on stand-by to ensure the availability of electric power during emergency conditions. Wireways shall afford mechanical protection and protection from fire hazard disrupting electrical supply from the SSDG to the switchboard and for all vital circuit distribution.

- 300-2.4.8 [RFP] A Failure Modes and Effect Analysis (FMEA) shall be provided. ([CDRL 085-314](#))

300-3 [RFP] Performance and General Requirements

- 300-3.1 [RFP] A complete and modern electrical system that includes the latest methods of design and workmanship shall be furnished and installed.
- 300-3.1.1 [RFP] A minimum of two independent ship service diesel generator sets shall be provided. All ship service generator sets shall be capable of being operated in parallel with both power (KW) and reactive power (KVAR) load sharing.
- 300-3.2 [RFP] Electric power integrity shall be the primary aim of the electrical system design. To ensure continuity of service, consideration shall be given to the number, size and location of generators, switchboards, and other electric equipment; to the type of power distribution system to be installed; and to the provisions of suitable methods for segregating or isolating damaged sections of the system. Other factors to be considered are the ease with which the system can be expanded to accommodate future growth, design, simplicity, minimized space and weight, and other characteristics that affect the operation of the vessel.
- 300-3.3 [RFP] The electrical plant shall be an ungrounded ship service and emergency electrical system delivering power at a nominal system voltage of 450 volt, 60 Hz, three-phase, connected delta-delta. Nominal utilization voltages are:
- 300-3.3.1 [RFP] 440 volt, 60 Hz, three phase.
- 300-3.3.2 [RFP] 440 volt, 60 Hz, single phase.
- 300-3.3.3 [RFP] 115 volt, 60 Hz, three phase.
- 300-3.3.4 [RFP] 115 volt, 60 Hz, single phase.
- 300-3.3.5 [RFP] 24 volt, DC.
- 300-3.3.6 [RFP] 12 volt, DC.
- 300-3.4 [RFP] Power Quality. Ship service power generation and distribution systems shall maintain the system characteristics of Type I power as defined in [MIL-STD-1399, Section 300A](#), "Interface Standard for Shipboard Systems - Electric Power Alternating Current". Note that power quality tolerances for Ship Service generation are tighter than power quality tolerances for distribution systems. See COR SECTION 310 for power quality tolerances for ship service generation. Equipment connected to the system shall operate and also conform to the constraints defined by the standard.
- 300-3.5 [RFP] A secondary ship service power distribution system shall be designed to distribute 28 volt DC power as an emergency source for selected loads such as power electronics, engine starting, control and monitoring and emergency lighting.

- 300-3.6 [RFP] The electrical plant shall be ungrounded except as required for ground detectors, instrument grounds, equipment frame grounds, personnel protection, or other special grounding requirements.
- 300-3.6.1 [RFP] For bonding, grounding and other techniques for controlling EMI, ensuring electromagnetic compatibility and safety, the requirements of [MIL-STD-1310G](#), "Standard Practice for Shipboard Bonding, Grounding, and other Techniques for Electromagnetic Compatibility and Safety" shall be met.
- 300-3.6.2 [RFP] Ground Detection. DC injection type grounding detection system with metering shall be provided. The metering system shall be provided with isolated contacts for remote summary alarm.
- 300-3.6.3 [RFP] Electrical and electronic equipments that exhibit high impedance ground paths shall be buffered from the ship's service power distribution system.
- 300-3.7 [RFP] Electrical machinery and equipment shall include suitable barriers to prevent personnel from contacting energized, moving or rotating parts. Warning signs shall be installed in conspicuous locations where shock hazards are present. Signs shall read, "DANGER SHOCK HAZARD" for voltages between 30 and 450 volts, and "DANGER HIGH VOLTAGE" where voltages greater than 450 volts are present.
- 300-3.8 [RFP] Electrical equipment shall be designed for marine service and shall operate within ratings without degradation under the conditions in [COR Section 070](#).
- 300-3.8.1 [RFP] Rating of Electrical Equipment and Machinery. For rating electric equipment and machinery the environmental standards in [IEEE-STD-45](#) shall be used.
- 300-3.9 [RFP] Electrical machinery shall be selected for the highest operating efficiency that is commensurate with reliability, duty cycle, and requirements of minimum size and weight.
- 300-3.10 [RFP] Electrical equipment shall be located and arranged so as to be readily accessible for repairs, adjustments and removal without requiring dismounting or removal of other equipment.
- 300-3.11 [RFP] Electrical equipment shall be located and arranged to prevent exposure to damage caused by leaking oil, water, steam or other piping.
- 300-3.11.1 [RFP] Electrical equipment and cables shall be located to ensure adequate ventilation.
- 300-3.11.2 [RFP] Enclosures for electrical equipment located in machinery compartments shall be drip-proof (NEMA 12). Electrical equipment located on the weather decks shall be watertight (NEMA 4X).
- 300-3.12 [RFP] Connection boxes, outlet boxes and similar wiring fittings, where exposed to the weather, condensation or dampness, shall be made of brass, bronze, CRES, or high impact strength FRP with corrosion resistant metal thread inserts. Exterior cable, except runs required on the mast, shall be run within the interior of the vessel and penetrate the exterior at the closest point available for the equipment being served. Cable shall be run within the interior and penetrate the exterior at the equipment being served. The use of exterior kick-pipes shall be minimized.

- 300-3.13 [RFP] Electrical equipment and devices shall be flush mounted in the living compartments, commissary spaces, and other areas finished with bulkhead sheathing.
- 300-3.14 [RFP] Rotating electrical machinery (including any C4ISR equipment) shall have the openings covered with rat proof screens.
- 300-3.15 [RFP] Equipment shall operate such that when power is interrupted no damage will result to any component or part of the equipment.
- 300-3.16 [RFP] Electrical equipment shall have electric heaters installed where required to prevent formation of condensation. A warning sign shall be installed adjacent to this equipment, indicating that the heaters are energized when the equipment is secured. If the heater supply is from a separate source, means for disconnecting the power supply is to be provided at the location of the equipment.
- 300-3.17 [RFP] Electrical equipment shall be provided with terminal blocks equipped with solderless terminals for connection of wiring. Circuit breakers and motor controllers equipped with lugs may be used for connection to cables. Wire nuts shall not be used.
- 300-3.18 [RFP] Porcelain shall not be used in electrical equipment.
- 300-3.19 [RFP] Unless otherwise specified, all electronic equipment shall be located or shielded, or both, to permit simultaneous operation with electrical power system equipment and cabling. Reduction of electromagnetic interference shall be performed to ensure system and equipment performance to manufacturer's standards. (See COR Section [406](#)).
- 300-3.20 [RFP] Circuit breakers shall not be used as switches for lighting or other equipment.
- 300-3.21 [RFP] The electrical system infrastructure shall meet the TEMPEST requirements in COR Section [400-3.6](#).

300-4 [RFP] Emergency Power

- 300-4.1 [RFP] Transitional Loads: In addition to the requirements of ABS HSNC 4-8-2/5.9 the following loads will be supplied with transitional power for 30 minutes:
- 300-4.1.1 [RFP] Navigational system.
- 300-4.2 [RFP] Emergency Loads: In addition to the requirements of ABS HSNC 4-8-2/5.5 the following loads will be supplied with emergency power for 12 hours:
- 300-4.2.1 [RFP] Machinery space ventilation.
- 300-4.2.2 [RFP] Ventilation equipment serving electronics and control spaces.
- 300-4.2.3 [RFP] Medical equipment.
- 300-4.2.4 [RFP] Submersible pump receptacles.
- 300-4.2.5 [RFP] Damage control receptacles.
- 300-4.2.6 [RFP] Weapons systems.
- 300-4.3 [RFP] An emergency source of power shall be capable of supplying at least 100% of the emergency load for a minimum of 30 minutes shall be provided to allow for uninterrupted transfer of power from a normal source to an emergency or alternate source.

- 300-4.4 [A010] The FRC-B Class Patrol Boat shall be provided with one emergency diesel generator, sized to deliver 100% of the emergency load in accordance with [46 CFR](#). The emergency diesel generator shall not be located below the main deck, nor directly above the main engine space.
- 300-4.5 [RFP] Emergency loads shall be as specified by [SOLAS](#) Chapter X, "Safety Measures for High-Speed Craft", [IMO-185E](#), "International Code of Safety For High-Speed Craft", Chapter 12 or [46 CFR](#).

300-5 [RFP] Shore Power

- 300-5.1 [RFP] Shore power interface receptacles shall be provided, and be protected using circuit breakers installed in the ship service switchgear. The shore power connections shall also comply with [COMDTINST M9000.6E](#) "Naval Engineering Manual", section 300.

300-6 [RFP] Test Requirements

- 300-6.1 [RFP] Factory Tests. - Major components/subsystems of the electric plant shall be factory tested in accordance with the requirements identified in the COR Sections for the components/subsystem. In addition to ABS HSNC test requirements, electrical testing shall be accomplished in accordance with [IEEE-STD-45](#), "Recommended Practice for Electrical Installations on Shipboard", Section 1.6, "Equipment construction, testing, and certification".
- 300-6.1.1 [RFP] A nationally recognized testing laboratory (NRTL) as referenced throughout this COR is a laboratory which meets the acceptance standards of [46 CFR, Subchapter Q, Subpart 159.010](#), "Independent Laboratory: Acceptance, Recognition, and Termination", and is permitted to label and approve electrical equipment for safety, by the U. S. Department of Labor Occupational Safety and Health Administration (OSHA).

SECTION 302. [RFP] ELECTRIC MOTORS AND ASSOCIATED EQUIPMENT**302-1 [RFP] General**

- 302-1.1 [RFP] This Section sets forth the requirements for electric motors, motor controllers, motor starters, master switches and motor controller devices.

302-2 [RFP] Design Standards and Criteria

- 302-2.1 [RFP] Unless otherwise specified in this COR, electric motors and associated equipment shall meet the design, performance, application and installation requirements of [IEEE-STD-45](#), "Recommended Practice for Electrical Installations on Shipboard", [46 CFR, Subchapter J, Electrical Engineering, 111.25](#) "Motors", and the National Electric Manufacturer's Association (NEMA) standards [MG1, "Motors and Generators"](#) and NEMA Industrial Controls and Systems (ICS). In addition to the requirements of [IEEE-STD-45](#), section 13.4 "Installation and Location" eye bolts or lifting lugs shall be used for all motors or transformers weighing over 25kg (55 lbs).
- 302-2.2 [RFP] Design, construction and testing requirements for electric motors except hydraulic pump motors shall be in accordance with [46 CFR 111.25](#). The power rating of equipment driving hydraulic pumps shall be at least continuous duty service at the power level necessary for the hydraulic pump to meet the worst case, peak performance condition required, without the driver overheating or in overload condition, as required in COR Section [556](#).
- 302-2.3 [RFP] Construction, rating, testing, and design requirements shall meet [NEMA MG-1](#).
- 302-2.4 [RFP] Motor controllers shall meet the design, testing and construction requirements of NEMA ICS and [UL 508](#), "Industrial Control Equipment". See COR SECTION 324 for motor control centers.

302-3 [RFP] Performance and General Requirements

- 302-3.1 [RFP] Electric motors with associated controllers, brakes, master switches, pilot devices and other associated equipment shall be provided as required for the driven equipment.
- 302-3.2 [RFP] Motors shall be selected to meet the performance requirements of the driven equipment. Motors shall be selected to provide the highest operating efficiency and highest degree of reliability commensurate with the requirements of the driven equipment.
- 302-3.3 [RFP] Motor speed, torque and power characteristics shall be compatible with the operating range requirements of the driven equipment. If brake horsepower needed by the driven equipment does not coincide with the NEMA motor standard nominal horsepower size, the next larger size motor shall be used.
- 302-3.4 [RFP] Motors shall be selected to have locked rotor currents as low as practicable to keep voltage fluctuations on the power distribution systems to a minimum and permit maximum use of across-the-line starting. The use of single phase AC motors shall be limited to one (1) horsepower or less.
- 302-3.5 [RFP] Calculations of maximum transient voltage dips on the power system shall be made in accordance with COR 0. The requirements will ensure that consideration has been given to the effects of starting large motors across-the-

line. Reduced voltage starters shall be used where necessary to ensure that the limits of maximum allowable voltage dip, as specified in [MIL-STD-1399, Section 300A](#), "Interface Standard for Shipboard Systems - Electric Power Alternating Current" have not been exceeded.

- 302-3.6 [RFP] Metals used in motor housings, mounting, and mounting hardware shall be "electrolytically inactive" to steel. Electrolytic action between dissimilar metals shall be minimized as defined in [MIL-E-917](#) and [MIL-STD-889](#). Coatings, platings, inserts and other means of preventing contact of motor metals with the steel structure shall not be used as an alternative.
- 302-3.7 [RFP] Motors with slip rings and commutators containing silicon shall not be used.
- 302-3.8 [RFP] Aluminum shall not be used in windings or current carrying parts of the motors.
- 302-3.9 [RFP] Unless otherwise specified, motors shall be equipped with factory-sealed prelubricated ball bearings or bearing housings so that in-service greasing will not be necessary except during manufacturer's recommended overhaul periods, minimum of 3 years.
- 302-3.10 [RFP] Motor starters and controllers which are standard designs shall be from the same manufacturer. Starters and controllers which are customized for the equipment or supplied as part of it are not subject to this restriction.
- 302-3.11 [RFP] Motor controllers operated from float, vacuum, or pressure switches shall include local start/stop controls in the event of failure of the float, vacuum or pressure switch.
- 302-3.12 [RFP] Steering gear motor control shall be in accordance with [46 CFR, Subchapter J](#) and the requirements contained in COR Section [561](#).
- 302-3.12.1 [RFP] Power distribution for the steering gear motors shall be in accordance with COR SECTION 320.
- 302-3.13 [RFP] Emergency stop stations shall be provided for ventilation systems in accordance with [IEEE-STD-45](#) and [46 CFR, Subchapter J](#). Where fire extinguishing systems are provided for compartments with mechanical ventilation, an interlock shall be provided to stop the applicable ventilation fan and sound an alarm, as required by the particular fire extinguishing system; see COR Section [555](#).

302-4 [RFP] Test Requirements

- 302-4.1 [RFP] Factory Tests - The Contractor shall provide, prior to installation, a certified letter, listing, or test results from a NRTL indicating that each type of motor provided meets the test requirements specified in [IEEE-STD-45](#), Section 13 For NRTL criteria, see COR 0. ([CDRL 302-001](#))

SECTION 303. [RFP] PROTECTIVE DEVICES FOR ELECTRIC CIRCUITS**303-1 [RFP] General**

- 303-1.1 [RFP] This Section sets forth the requirements for protective devices for all electric circuits used in any system specified in this COR.
- 303-1.2 [RFP] Protective devices as specified herein shall include but not be limited to: circuit breakers, fuses, thermal tripping devices, current-limiting devices, reverse power protection devices, and power switches.

303-2 [RFP] Design Standards and Criteria

- 303-2.1 [RFP] Each protective device shall meet the design, performance, application, and installation requirements of [46 CFR, Subchapter J, Subpart 111.50](#), "Overcurrent Protection", [IEEE-STD-45](#), [IEEE-STD-242](#), [UL Standard 508](#), "Industrial Control Equipment", and [NFPA 70](#), "National Electric Code" unless otherwise specified in this COR.
- 303-2.1.1 [RFP] [IEEE-STD-242](#) describes the requirements for electrical system protection and coordination to provide for the prevention of injury to personnel, to minimize damage to the system components, and to limit the extent and duration of interruption whenever equipment failure, human error, or adverse events occur on any portion of the system.
- 303-2.1.2 [RFP] [UL Standard 508](#), "Industrial Control Equipment". These requirements cover industrial control devices, and devices accessory thereto, for starting, stopping, regulating, controlling, or protecting electric motors. These requirements also cover industrial control devices or systems that store or process information and are provided with an output motor control function(s).

303-3 [RFP] Performance and General Requirements

- 303-3.1 [RFP] Over-current and short circuit protective devices shall be provided for each electrical power distribution circuit.
- 303-3.2 [RFP] Each unit of equipment and all circuits shall be protected from short circuit currents and thermal overloads.
- 303-3.3 [RFP] Protective devices shall be sized to withstand maximum calculated fault currents. The selection, arrangement, and performance of various protective devices shall provide a complete coordinated protective system having the following characteristics:
- 303-3.3.1 [RFP] High speed clearing of all low impedance faults.
- 303-3.3.2 [RFP] Maximum continuity of service under fault conditions to be achieved by the selective operation of the various protective devices. Proper localizing of a fault condition to restrict outages to the equipment affected.
- 303-3.3.3 [RFP] The minimum rating for circuit breakers shall be 15 amps.
- 303-3.3.4 [RFP] Single pole circuit breakers shall not be used. All circuit breakers shall be a minimum of double pole devices.
- 303-3.3.5 [RFP] Maximum protection for electric apparatus and circuits under fault conditions by coordination of the thermal characteristics of the circuit or apparatus with the circuit interrupting characteristics of the protective device.

- 303-3.3.6 [RFP] Adequate interrupting capacity in all circuit interrupting devices.
- 303-3.3.7 [RFP] Adequate thermal rating shall be provided in all of the various circuit protective and switching devices for operation under all service conditions.
- 303-3.3.8 [RFP] Short circuit current carrying capacity of circuit breakers and bus transfer equipment in excess of the maximum available short circuit current within the maximum time limitations of circuit opening.
- 303-3.3.9 [RFP] General provisions set forth in [NFPA 70](#) shall be followed with the exception of conductor ampacities. Conductor ampacities are to be determined in accordance with COR SECTION 304 "Electric Cables".
- 303-3.4 [RFP] Circuit breakers shall be from the same manufacturer unless otherwise authorized by the Contracting Officer.
- 303-3.5 [RFP] Generator and shore-tie circuit breakers shall include integral under voltage trips (UVT).

303-4 [RFP] Test Requirements

- 303-4.1 [RFP] Factory Tests - The Contractor shall provide, prior to installation, a letter, listing, or test results from a NRTL that each type of protective device provided meets the test requirements specified in [46 CFR, Subchapter J, Subpart 111.50](#), "Overcurrent Protection". ([CDRL 303-001](#))

SECTION 304. [RFP] ELECTRIC CABLES**304-1 [RFP] General**

- 304-1.1 [RFP] This Section sets forth the requirements for construction, application, installation, and testing of shipboard electric cables for power, lighting, interior communications, control systems, and electronics systems, unless otherwise specified in this COR.

304-2 [RFP] Design Standards and Criteria

- 304-2.1 [RFP] All cabling shall be of low smoke and zero halogen construction in accordance with [MIL-DTL-24643B](#), "Cables and Cords, Electric, Low Smoke, for Shipboard Use, General Specification for" or [MIL-DTL-24640B](#).
- 304-2.2 [RFP] Any cabling that penetrates watertight bulkheads or decks shall be watertight.
- 304-2.3 [RFP] Where special system design features require cable types other than those covered by [MIL-DTL-24643B](#)) those special system cables shall be in accordance with [IEEE-STD-45](#), "Recommended Practice for Electrical Installations on Shipboard".
- 304-2.4 [RFP] Certification shall be provided that all cables provided meet [MIL-DTL-24643B](#), [MIL-DTL-24640B](#), or [IEEE-STD-45](#). (CDRL 304-001)
- 304-2.5 [RFP] Electric cable applications shall be in accordance with [46 CFR, Subchapter J](#), Electrical Engineering and [IEEE-STD-45](#).
- 304-2.6 [RFP] All cable installation shall be in accordance with [DOD-STD-2003](#).

304-3 [RFP] Performance and General Requirements

- 304-3.1 [RFP] Cables selected shall be sized to continuously operate any equipment supplied through it and cable shall be classified for the type of service to which it is applied.
- 304-3.2 [RFP] Power supply cables for power, motor controllers, and lighting panelboard feeders shall have sufficient current carrying capacity to supply the required spare circuits in the panel boards as specified in COR SECTION 324, for future load growth.
- 304-3.3 [RFP] Where parallel cables are utilized to increase the current carrying capacity of the circuit or to reduce the voltage drop, all parallel conductors shall have the same cross-sectional area and length. For three phase circuits using cables in parallel, each cable shall contain all three phases.
- 304-3.4 [RFP] No more than one power distribution circuit shall be run in a single cable.
- 304-3.5 [RFP] Cables used for low voltage control and interior communication (IC) system circuits shall be installed or shielded such that stray electrical signals do not interfere with the equipment operation or activate any other circuits. [MIL-STD-1310G](#).
- 304-3.6 [RFP] Cableways shall be located to provide a pattern which allows maximum athwartship and vertical separation of cables to vital loads requiring two sources of power.

- 304-3.7 [RFP] Cable runs shall be run in a neat and orderly manner presenting a tight straight run. The runs shall be tightly fitted as close to the overhead or bulkhead as practical and shall not be routed around pipe runs. Whenever cables are concealed behind panels, sheathing or other surface material, access panels to cable connections shall be provided. Access panels shall be labeled to identify the concealed cable connections. Vertical cableways and cable trunks shall be provided with bolted access covers at each deck. Accesses shall be large enough to accommodate service to the cable's connections. Cables shall not be installed behind nor imbedded in insulation or behind protective sheathing in machinery compartments.
- 304-3.8 [RFP] Main cableways shall be located in the overhead of passageways, wherever practicable.
- 304-3.9 [RFP] Cables used for battery connections shall be high-flex stranded cable in accordance with [MIL-DTL-24643](#) or [MIL-DTL-24640](#).

304-4 [RFP] Monitoring Alarm and Controls

- 304-4.1 [RFP] Insulation resistance monitoring and alarm systems shall be provided for the ship service power distribution systems in accordance with the requirements of COR SECTION 320.

SECTION 305. [RFP] ELECTRICAL AND ELECTRONICS DESIGNATING AND MARKING SYSTEMS**305-1 [RFP] Performance and General Requirements**

- 305-1.1 [A009] Information plates, label plates, and tags shall be installed for equipment, circuits, conductors and cables for power, lighting, electronics, interior communications, and other electrical systems in accordance with [NAVSEA S9AA0-AA-SPN-010/GEN-SPEC](#) sections 305 and 400e "General Specifications for Ships of the US Navy".
- 305-1.2 [RFP] Nameplates for motors, generators, transformers, control apparatus, switchboards, heaters, brakes, and clutches shall be in accordance with applicable nameplate sections of [IEEE-STD-45](#), "Recommended Practice for Electrical Installations on Shipboard."

SECTION 310. [RFP] SHIP SERVICE GENERATORS**310-1 [RFP] General**

- 310-1.1 [RFP] This Section sets forth requirements for design, installation, and test for ship service generator sets as well as generator local control boards.
- 310-1.2 [RFP] Requirements for generator prime movers and their support equipments are provided in COR Section 502.

310-2 [RFP] Design Standards and Criteria

- 310-2.1 [RFP] Generators and local control boards shall meet the design, construction, installation and testing requirements of the following standards or specifications in descending order of precedence:
 - 310-2.1.1 [RFP] [ABS HSNB](#).
 - 310-2.1.2 [RFP] [46 CFR](#).
 - 310-2.1.3 [RFP] [IEEE-STD-45](#).
 - 310-2.1.4 [RFP] [NEMA MG-1](#), "Motors and Generators".
- 310-2.2 [RFP] Generators shall produce Type I power in accordance with [MIL-STD-1399, Section 300A](#), "Interface Standard for Shipboard Systems - Electric Power Alternating Current".
- 310-2.3 [RFP] The generator sets shall be capable of operating continuously without degradation or interruption of power when installed under the environmental conditions specified in COR Section 070.
- 310-2.4 [RFP] The generator sets shall meet the vibrational, balance, and torsional requirements of COR Section 073.
- 310-2.5 [RFP] Documentation shall be provided showing that the generator meets the test requirements of table IV of [MIL-G-3124D](#) excluding shock tests. Only one generator needs to be certified to the first article test requirements.

310-3 [RFP] Performance and General Requirements

- 310-3.1 [RFP] Ship Service Generator Sets.
 - 310-3.1.1 [RFP] The ship service power generation system shall consist of two identical, independent, diesel driven, three phase, three wire, delta wound, 60 Hz, A. C., 450V, ungrounded ship service generator sets.
 - 310-3.1.2 [RFP] Generator sets shall be provided with the generator directly coupled to the prime mover and complete with excitation, voltage regulation, speed governing systems, and local control board.
 - 310-3.1.3 [RFP] Generator sets shall have demonstrated commercial marine or Navy marine service for a period of two years while operated at not less than the required continuous rating of the design.
 - 310-3.1.4 [RFP] Ship service generator sets shall be of like rating, type, design, model number, and manufacturer.
 - 310-3.1.5 [RFP] Heaters - Each generator shall come complete with anti-condensation heaters. The heaters shall be capable of maintaining the temperature inside the enclosure at least 5°C 41°F above the temperature outside the enclosure.

The heater controls shall automatically energize the heater whenever the generator is not operating and shall de-energize the heater whenever the generator is operating. Heater "ON" indication shall be provided on the local generator control board.

310-3.2 [RFP] Generator Operations

- 310-3.2.1 [RFP] Each generator shall be designed to run alone or in continuous parallel operation with the other ship service generators and emergency generator(s) up to their combined maximum power ratings.
- 310-3.2.2 [RFP] Each ship service generator shall be sized to be at least 20% greater than the maximum basic operating load. The maximum basic operating load shall be the largest of the summer, winter, anchor, shore, cruising, functional, or emergency operating conditions as calculated in COR Section 300-2.4.2 plus starting the largest non-maneuvering motor with one generator inoperable.
- 310-3.2.3 [RFP] Generators shall operate in parallel with shore power only for momentary load transfer. Shore power shall be in accordance with [IEEE-STD-45](#) and Commandant Instruction [M9000.6E](#), "Naval Engineering Manual".
- 310-3.2.4 [RFP] Insulation materials containing silicone are prohibited.
- 310-3.2.5 [RFP] Contact surfaces and lugs shall be silver plated in accordance with [IEEE-STD-45](#), section 7.4.4 "Terminal arrangements and incoming cables".

310-3.3 [RFP] Excitation

- 310-3.3.1 [RFP] Excitation shall be static brushless type without external power requirements. Excitation shall use a PMG (Permanent Magnet Generator).
- 310-3.3.2 [RFP] Excitation system shall limit voltage buildup to 115% of rated voltage under abnormal or failure conditions.

310-3.4 [RFP] Voltage Regulation

- 310-3.4.1 [RFP] Voltage regulation and excitation system shall be modular design to allow removal and replacement of all components for service and repair. Modular components shall be capable of continuous operation in drip-proof enclosure.
- 310-3.4.2 [RFP] Voltage regulation performance and testing shall be in accordance with [MIL-R-2729D](#).
- 310-3.4.3 [RFP] Voltage regulator shall provide manual and automatic control of voltage. Automatic control shall not override manual control.
- 310-3.4.4 [RFP] Backup (automatic or manual) voltage control of generator voltage shall be available. Backup control shall be local and/or remote as required for the specific installation.

310-3.5 [RFP] Speed Governor

- 310-3.5.1 [RFP] The governor shall sense electrical load and prime mover speed.
- 310-3.5.2 [RFP] The governor shall meet the performance and testing requirements of [MIL-G-21410A](#). The governor shall permit parallel operation of alternating current generating sets.

- 310-3.5.2.1 [RFP] Backup Engine Speed Governing of generator prime movers shall be available. The system shall automatically transfer to the backup system upon failure of the primary control. Where electronic fuel injection is used to control prime mover speed a redundant ECU, Electronic Control Unit with automatic switchover shall be acceptable in lieu of a backup mechanical speed control. Backup Control shall provide for speed control at required stations, (i.e., control switchboards, local engine control panels and other locations as required by the specific installation).
- 310-3.5.3 [RFP] The governor shall maintain MIL-STD-1399, Section 300A, frequency variation within type 1 power limits with sudden application of 100% of the maximum basic operating load identified from the system load and power analysis (see COR Section 300-2.4.1), applied at zero load and removed to no load condition.
- 310-3.5.4 [RFP] The governor shall provide zero speed droop in load sensing mode and shall provide speed droop when paralleling with shore power or other generator.
- 310-3.6 [RFP] Load Monitoring and Sharing
- 310-3.6.1 [RFP] Ratio of KW load to KW rating of paralleled generator shall not exceed the ratio of total KW load to KW rating of combined paralleled generators by more than 5%.
- 310-3.6.2 [RFP] Voltage regulation shall maintain division of reactive paralleled load such that kilovolt amp reactive (KVAR) supplied by each generator is within 6% percent of each generator's KVAR rating. The regulation is to be accomplished at rated frequency and any load and power factor and not more than 4% reactive droop compensation.
- 310-3.7 [RFP] Paralleling
- 310-3.7.1 [RFP] Manual and automatic paralleling of the generators shall be provided. Equipment shall be furnished as described in COR SECTION 324.
- 310-3.7.2 [RFP] Ship service generators shall be capable of momentary transfer of SSDG load to shore power without going dead ship.
- 310-3.8 [RFP] Sizing
- 310-3.8.1 [RFP] The generator and diesel shall be rated at the manufacturer's continuous duty rating (see COR Section 502).
- 310-3.8.2 [RFP] Ship service generators shall operate a minimum of 2 hours at 115% of their respective rating with ambient air and combustion intake air at 55°C (131°F).
- 310-4 [RFP] Monitoring and Control**
- 310-4.1 [RFP] Local generator control panels shall include controls, instruments, and switches to allow generator starting and stopping. Diesel engine parameters monitored at these panels are identified in COR Section 500.
- 310-4.2 [RFP] Emergency stop controls shall be provided for ship service generators. The control shall function as described in Section 500 and shall trip and lock open the generator output circuit breakers. Each stop control shall alarm in the engine room and pilothouse.

- 310-4.3 [RFP] Operation of switches and transfer of control between generators shall not cause damage to excitation system.
- 310-4.4 [RFP] Local generator control panels shall be designed and installed to allow full front access. Panel face shall be hinged and shall be capable of being locked in the fully-open position.
- 310-4.5 [RFP] The generators shall meet the selection and construction requirements in the NEMA ICS Series.
- 310-4.6 [RFP] The monitoring and control equipment shall meet the requirements of [IEC 60092-504](#).
- 310-4.7 [RFP] Ship Service Generator Control shall be capable of operating as a stand alone system separate from other machinery plant control systems.

310-5 [RFP] Test Requirements

- 310-5.1 [A010] Shipboard Production Tests - Generator sets shall be subjected to the following tests ([CDRL 310-001](#)) in addition to other tests required to verify that performance tests are met. The test report shall include data for:
 - 310-5.1.1 [RFP] Two hour 115% rated load test.
 - 310-5.1.2 [RFP] Step load increase; see COR Section 310-3.5.3
 - 310-5.1.3 [RFP] Voltage regulation waveforms showing magnitude and frequency during step loads.
 - 310-5.1.4 [RFP] Temperature rise data.
 - 310-5.1.5 [RFP] Certificates showing [UL 508](#), [IEEE-STD-45](#), and [UL 891](#) compliance.

SECTION 313. [RFP] STORAGE BATTERIES**313-1 [RFP] General**

313-1.1 [RFP] This Section sets forth the requirements for storage batteries, and battery chargers.

313-2 [RFP] Design Standards and Criteria

313-2.1 [RFP] Each battery, battery bank, battery charger, and uninterruptible power supply shall meet the design, performance, application, and installation requirements of the following standards and specifications in descending order of precedence, unless otherwise specified in this COR:

313-2.1.1 [RFP] [ABS HSNC Guide](#).

313-2.1.2 [RFP] [IEEE-STD-45](#),

313-2.1.3 [RFP] [46 CFR, Subchapter J \(Section 111.15\)](#), “

313-2.1.4 [RFP] [UL 1236](#), “Battery Chargers for Charging Engine Start Batteries”.

313-2.2 [RFP] [IEEE-STD-485](#), “Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications” shall be used as reference for battery selection.

313-3 [RFP] Performance and General Requirements

313-3.1 [RFP] All installations shall be ungrounded.

313-3.2 [RFP] In addition to the required overload and short circuit protection (see COR SECTION 303), each battery bank shall have a manual disconnect device.

313-3.3 [RFP] All batteries shall be of the low maintenance vent-relief lead acid (VRLA) type. VRLA batteries shall be of the absorbed glass-mat (AGM) construction. Batteries used for diesel engine starting shall meet the battery rating requirements of [IEEE-STD-45](#). Diesel engine starting battery rating calculations shall be provided. ([CDRL 085-315](#)).

313-3.4 [RFP] Each battery comprising a battery bank shall have equal characteristics and be from the same manufacturer. Battery capacity (amp-hour) shall be one size larger than that computed using the standard method cited in [IEEE-STD-485](#) for usage profile. Capacity calculations demonstrating compliance shall be provided ([CDRL 085-315](#)).

313-3.5 [RFP] Non-absorbent insulating support material for battery banks shall meet the battery installation and arrangement requirements of [IEEE-STD-45](#).

313-3.6 [RFP] Battery terminals shall be insulated to prevent accidental shorting across the terminals.

313-3.7 [RFP] Each installed battery charger, alternator, and voltage regulator shall be compatible with the batteries and battery bank configuration selected, shall have battery temperature compensation, and shall be capable of completely recharging the attached battery bank in a maximum of eight (8) hours without exceeding a safe charging rate. Battery chargers/alternator voltage regulators for AGM batteries shall use three-stage charging.

313-3.8 [RFP] Charger testing and operation shall meet the requirements of [UL 1236](#).

313-4 [RFP] Monitoring, Alarms and Control

- 313-4.1 [RFP] Each battery charger that is attached to a diesel engine starting battery bank shall have a disconnect device which automatically isolates the charger from the battery bank during engine starting. A cross connect shall be provided to allow engine starting from each battery bank without affecting the operation of any running engines.
- 313-4.2 [RFP] Each battery charger shall have an audible alarm function that provides charger output failure indication.
- 313-4.3 [RFP] Battery charging stations shall be ventilated to prevent build up of hydrogen gas. Battery Charging Stations meeting the requirements for low-hydrogen-emissions Battery Storage Location do not require ventilation. Calculations to verify that ventilation is not needed shall be provided ([CDRL 085-315](#)).
- 313-4.4 [RFP] Volt meters shall be provided for starting batteries. The meters shall have a minimum range of 0VDC to 36VDC. The voltmeters shall be located within eyesight of the battery bank selector switches.

313-5 [RFP] Test Requirements

- 313-5.1 [RFP] Factory Test - Prior to installation, a certified letter shall be provided, listing test results from a NRTL indicating that each battery and battery charger meets the specified requirements and [46 CFR, Subchapter J, Subpart 111.15 \(CDRL 313-001\)](#)

SECTION 314. [RFP] POWER CONVERSION EQUIPMENT**314-1 [RFP] General**

314-1.1 [RFP] Power conversion equipment shall include the following items:

314-1.1.1 [RFP] Transformers.

314-1.1.2 [RFP] Uninterruptible Power Supplies (UPS).

314-1.1.3 [RFP] Inverters.

314-1.1.4 [RFP] Converters.

314-2 [RFP] Design Standards and Criteria

314-2.1 [RFP] All power conversion equipment shall also meet the requirements of, [IEEE-STD-519](#), [NAVSEA GEN SPEC](#), Section 314, and [UL 1778](#) unless otherwise specified in this Section.

314-2.2 [RFP] Transformers shall have KVA ratings of not less than 115% of the maximum demand load plus the spare circuits. Transformers shall be dry type.

314-3 [RFP] Performance and General Requirements

314-3.1 [A009] Power conversion equipment, in accordance with the referenced standards, shall be provided where required by the selected design; see COR SECTION 300.

314-3.2 [A009] All power conversion equipment shall be sized based on system load and power analysis; see COR SECTION 300.

314-3.3 [RFP] All power conversion equipment with similar power characteristics shall be from the same manufacturer.

314-3.4 [RFP] All transformers shall be single phase. Where a three phase transformer bank is required, three single phase transformers shall be wired for three phase service. All three phase transformer banks shall be wired closed delta unless a specified load requires a different wiring arrangement.

314-3.5 [RFP] Individual transformer banks shall be provided for:

314-3.5.1 [RFP] Small power and lighting distribution systems; see COR SECTION 320 and SECTION 330.

314-3.5.2 [RFP] Electronic equipment

314-3.5.3 [RFP] Systems or specific pieces of equipment which have special isolation, grounding, or voltage requirements.

314-3.6 [A010] The power conversion equipment shall be able to operate on and compatible with Type I power in accordance with [MIL-STD-1399C 300A](#).

314-3.7 [A010] If a power conversion device is supplied with a computer based system, that system shall meet the requirements of [IEC 60092-504](#).

314-3.8 [A010] If a power conversion device uses semiconductor converters, those converters shall meet the requirements of [IEC 60146-1-1](#).

314-3.9 [A010] Power conversion equipment shall meet the application and installation requirements of [IEEE-STD-45](#).

- 314-3.10 [A010] Any Uninterruptible Power Supply (UPS) shall meet the design and testing requirements of [IEEE-STD-944](#). The unit(s) supplied shall be of the type specified in paragraph 5.4.3.3.
- 314-3.11 [A010] [NEMA-STD-PE1](#). Uninterruptible Power Supplies.
- 314-3.12 [A010] All shipboard transformers shall be dry type and shall meet the construction, rating and test requirements as specified in [IEEE-STD-C57.12.01](#).

314-4 [RFP] Monitoring, Alarms and Control

- 314-4.1 [A009] All monitoring, alarms and controls for equipment in this Section shall be as required by the referenced standards or as specified in this Section for the system it supports (see COR SECTION 300 for the electric plant).

314-5 [RFP] Test Requirements

- 314-5.1 [RFP] Factory Tests - The Contractor shall provide, prior to installation, a certified letter, listing or test results from a NRTL indicating that each power conversion device meets the test requirements specified. ([CDRL 314-001](#))

SECTION 320. [RFP] GENERAL REQUIREMENTS FOR ELECTRIC POWER DISTRIBUTION SYSTEMS

320-1 [RFP] General

320-1.1 [RFP] This Section sets forth the requirements for all shipboard electric power distribution systems including the following:

320-1.1.1 [RFP] Ship service power distribution system

320-1.1.1.1 [RFP] The electrical distribution system must have the capability of restoring the propulsion plant after loss of all ship service power at sea. Redundant auxiliaries are to be segregated and shall be supplied from separate and independent power distribution panels.

320-1.1.2 [RFP] Lighting distribution system

320-1.1.3 [RFP] Shore power facility

320-1.1.4 [RFP] Emergency power distribution system

320-1.1.5 [RFP] The Ship Service power distribution system shall meet the power quality and tolerance requirements of [MIL-STD 1399C 300A](#) type 1.

320-1.1.6 [RFP] Power quality, at the point of common coupling, with respect to EMI with communications systems shall comply with [IEEE-STD-519](#). References to infinite bus are not applicable unless on shore power.

320-2 [RFP] Definitions

320-2.1 [RFP] Ship Service Power Distribution System - The FRC-B's main power distribution system and the normal source of power to equipment.

320-2.2 [RFP] Lighting Distribution System - A subsystem of the ship service power distribution system, provides power to lighting fixtures to provide illumination throughout the FRC-B, and also furnishes 115 volt, 60 Hertz power to small appliances and service outlets.

320-2.3 [RFP] Shore Power Facility - A system of receptacles, cables, and circuit breakers on the FRC-B connected so as to allow a shoreside power source to supply power to the electrical power distribution system.

320-2.4 [A010] Emergency Power Distribution System - The FRC-B's emergency power distribution system is intended to provide emergency power to equipment necessary for the safety of the crew and the survivability of the FRC-B in the event of loss of ship's service power.

320-3 [RFP] Design Standards and Criteria

320-3.1 [RFP] The ship service and emergency power distribution systems and shore tie system shall meet the design, performance, application, and installation requirements of [IEEE-STD-45](#) and [46 CFR, Subchapter J](#), unless otherwise specified in this COR.

320-4 [RFP] Performance and General Requirements

320-4.1 [RFP] General - The following general requirements apply to all power distribution systems.

- 320-4.1.1 [RFP] Power distribution equipment and cabling shall be provided for all power distribution systems.
- 320-4.1.2 [RFP] The distribution system shall be developed to suit the number and rating of all electrical equipment to be installed. Selection of system wiring and protective devices based on expected ratings of electrical equipment shall not relieve the Contractor of the responsibility of installing wiring and protective devices to suit the equipment installed aboard the FRC-B at the time of delivery.
- 320-4.1.3 [RFP] Two sources of power shall be installed to ensure continuity of service to vital equipment as defined by ABS HSN 4-8-2/5.15 Vital Distribution System.
- 320-4.1.4 [RFP] A Ground Detection/Alarm System shall be provided for the ship service distribution system.
 - 320-4.1.4.1 [RFP] Ground Detection. DC injection type grounding detection system with metering shall be provided. The metering system shall be provided with isolated contacts for remote summary alarm.
 - 320-4.1.4.2 [RFP] Ground detection system remote displays shall be installed in the pilothouse.
- 320-4.2 [RFP] Ship Service Power Distribution System
 - 320-4.2.1 [RFP] Distribution of ship service power shall be from the ship service switchboard.
 - 320-4.2.2 [RFP] The ship service switchboard bus shall distribute and control 440 volt and 115 volt, 3 phase, ungrounded, Type I power in accordance with the requirements of [MIL-STD-1399, Section 300A](#).
 - 320-4.2.3 [RFP] Power distribution panels designed for galley equipment shall be readily accessible to galley personnel and located in close proximity to the galley access. If a deep fat fryer is installed, the circuit breaker supplying power to the deep fat fryer shall be provided with a shunt trip coil. The shunt trip coil shall be connected in series with the normally open contacts of the high fat temperature thermostat on the fryer so that when the thermostat's contacts close, power is applied to the shunt trip coil, tripping the circuit breaker and de-energizing the fryer.
 - 320-4.2.4 [RFP] Distribution of power to vital electronics equipment shall be in accordance with the following:
 - 320-4.2.4.1 [RFP] Electronics equipment shall be supplied from dedicated transformers, load centers, and distribution panels.
 - 320-4.2.4.2 [RFP] Where electronics equipment requires a grounded power supply, the ground conductor shall be returned to the main ship service switchboard.
 - 320-4.2.4.3 [RFP] Individual isolation transformers shall be provided where electronics equipment requires a grounded power supply.
 - 320-4.2.4.4 [RFP] A separate power disconnect device shall be provided for each piece of electronic equipment. The disconnect device shall be in the same compartment as the equipment it serves and shall be readily accessible.

- 320-4.2.4.5 [RFP] Rack mounted electronics equipment shall be provided with power via an integral rack distribution system. (COR Section [400-3.8](#).)
- 320-4.2.4.6 [RFP] If an electronic main engine control and monitoring system is provided, a dedicated circuit shall provide the primary source of power for all components of the system. A second dedicated circuit shall provide the secondary source of power for all components of the system. These two dedicated circuits shall receive their power from separate, independent sources and shall be in accordance with the engine and controls manufacturers' design and installation recommendations.
- 320-4.2.4.7 [RFP] The steering systems shall meet the power and control requirements of [46 CFR 58.25-65](#) and [58.25-70](#).
- 320-4.2.4.8 [RFP] The power distribution shall provide Type I power for standard power distribution throughout the cutter, and provide Type III power requirements if required by system design, for special requirements in accordance with [MIL-STD-1399C 300A](#).
- 320-4.3 [RFP] DC power distribution systems shall be provided to supply power to DC loads (see COR Section [300-3.5](#)).
- 320-4.3.1 [RFP] Ground Detection. DC injection type grounding detection system with metering shall be provided. The meter shall be located on the face of the DC load center. The metering system shall be provided with isolated contacts for remote summary alarm located in the pilothouse.
- 320-4.4 [RFP] Distribution of power for IC systems shall be from the IC panel and shall be in accordance with COR Section [430](#).
- 320-4.5 [RFP] Lighting Distribution Systems
- 320-4.5.1 [RFP] Electric power for supply to the ship service lighting system, general purpose receptacles, small appliances, and other 115 volt loads shall be supplied from the ship service power distribution system via 440 to 115 volt transformer banks, load centers and power distribution panels.
- 320-4.5.2 [RFP] Lighting system equipment and controls shall be in accordance with COR SECTION [330](#).
- 320-4.5.3 [RFP] A system for general purpose 115 volt, duplex, AC receptacles shall be installed meeting [46 CFR](#) and [IEEE-STD-45](#) requirements and the following:
- 320-4.5.3.1 [RFP] Receptacles shall be installed to allow use of portable tools, lights, and small appliances any place on the FRC-B (interior and weather decks) without requiring more than 7.5m (24.6 ft) of portable cable.
- 320-4.5.3.2 [RFP] There shall be at least one receptacle in each compartment except for hazardous locations as defined in the [ABS HSNC Guide](#).
- 320-4.5.3.3 [RFP] There shall be at least one receptacle inside each bridge console cabinet for servicing equipment.
- 320-4.5.3.4 [RFP] Commissary compartments shall have one receptacle for each piece of portable electrical equipment which is used exclusively in that compartment. Receptacles shall be bulkhead mounted for use with the designated equipment.

- 320-4.5.3.5 [RFP] Berthing compartments, sanitary compartments, and mess room shall have at least one GFCI receptacle for each of the following:
- 320-4.5.3.5.1 [RFP] mirror
 - 320-4.5.3.5.2 [RFP] berth (see COR Section [640](#))
 - 320-4.5.3.5.3 [RFP] For every 3.5m (11.5 ft) of bulkhead, or fraction thereof, regardless of presence of mirror or berth receptacles.
- 320-4.5.3.6 [RFP] Receptacles shall be provided for each 0.5m (1.6 ft) of length for each workbench. Workshops shall have one receptacle for every 3.5m (11.5 ft) bulkhead or fraction thereof, regardless of the presence of workbench receptacles.
- 320-4.5.3.7 [RFP] A watertight 115VAC electrical outlet shall be provided near each P-100 pump to provide power for an electric heater.
- 320-4.6 [RFP] Shore Power Facility
- 320-4.6.1 [A003] Two watertight shore tie connection stations shall be provided in readily accessible locations, one port and one starboard on the weather deck.
 - 320-4.6.1.1 [RFP] A bail operated cam-type locking socket shall be installed as the shipboard receptacle for the electrical shore-tie.
 - 320-4.6.2 [RFP] Shore tie cabling, circuit breakers and receptacles shall be sized based on the results of the system load and power analysis, in-port condition (see COR 0) allowing 20% margin for future load growth.
 - 320-4.6.3 [RFP] The Contractor shall provide a portable cable to connect from the FRC-B's shore tie receptacle to the shore side receptacle. The cable shall be a minimum of 30m (98 ft) in length. Each portable cable shall be sized to carry the shore tie load in accordance with the results of the system load and power analysis, in-port condition (see COR 0). Cable stowage shall be provided in the interior of the FRC-B.
 - 320-4.6.3.1 [RFP] Shore-tie cabling, circuit breaker and receptacle sizing is determined by the Engineering Plant Load Analysis (EPLA), In-port condition. Shore tie plugs and receptacles shall comply with [COMDTINST M9000.6E](#).
 - 320-4.6.3.2 [RFP] A plug compatible with the socket required in COR Section 320-4.6.1.1 shall be provided and installed for the shipboard end of the shore-tie cable.
 - 320-4.6.3.3 [RFP] A Russell Stoll MaxGuard DS-2404MP plug, or equal, shall be provided for the shoreside end of the shore-tie cable to allow the FRC-B to accept shore power from Coast Guard facilities.
 - 320-4.6.4 [RFP] The FRC-B shall have interlocks to function with the shore facility as follows:
 - 320-4.6.4.1 [RFP] Shore tie plugs must be inserted before the FRC-B's shore tie circuit breaker can be closed.
 - 320-4.6.4.2 [RFP] The FRC-B's shore tie circuit breaker cannot be closed unless the ship service bus has been synchronized with the shore power.

320-5 [RFP] Material and Material Certification

- 320-5.1 [RFP] Material and material certification shall be as required by [IEEE-STD-45](#) and [46 CFR, Subchapter J](#) for each item of power distribution equipment.

320-6 [RFP] Test Requirements

- 320-6.1 [RFP] Factory Tests - Electrical power distribution system equipment shall meet the test requirements specified in the appropriate COR section for the equipment; see COR SECTION 303, SECTION 304, SECTION 314, and SECTION 324.

SECTION 324. [RFP] SWITCHGEAR**324-1 [RFP] General and Performance Requirements**

- 324-1.1 [RFP] This Section sets forth the requirements for the ship service switchboard, power and lighting distribution panels, and bus transfer equipment.
- 324-1.1.1 [RFP] The generator control systems and switchboard shall meet the requirements of [46 CFR](#), [UL 508](#), and [ISO 8528](#), Part 4.
- 324-1.1.2 [RFP] Programmable controllers shall be compliant with [NEMA IA 2.1](#), [NEMA IA 2.2](#) and [NEMA IA 2.3](#).
- 324-1.2 [RFP] Ship Service Switchboard
- 324-1.2.1 [RFP] A switchboard shall be installed for the control, operation, and protection of the ship service power generation and distribution systems.
- 324-1.2.2 [RFP] Switchboard bus work shall be copper. Bus connections shall have silver surfaced contacts. Bare bus bar shall meet the minimum spacing requirements of one (1) inch.
- 324-1.2.3 [RFP] Terminals in switchboards and panelboards shall be located so that it will not be necessary to reach across uninsulated line bus to make connections or replace fuses.
- 324-1.2.4 [A009] The switchboard shall withstand, without mechanical or electrical damage, environmental vibration requirements of [IEEE-STD-45](#), paragraph 201.4. A physical vibration test of the actual switchboard to be installed on the lead cutter is required as part of the factory acceptance test. Verification shall be provided that this requirement has been met in accordance with [CDRL 324-001](#).
- 324-1.2.5 [RFP] Switchboard instruments shall be flush mounted. The instruments shall display the monitored parameter in an analog format for instantaneous recognition of trend information. The instrument's scale shall be marked to indicate the rated value of the parameter being measured. Instruments shall have sensitivities which are twice the sensitivity of the associated controls; for example, 5% sensitivity instruments shall be used with 10% sensitivity controls.
- 324-1.2.5.1 [RFP] An ammeter shall be provided on the switchboard capable of measuring the ships ampere draw while on shore power.
- 324-1.2.6 [RFP] Switches for instrument transfer or control functions shall be of the rotary type, equipped with clearly marked escutcheon plates to indicate function and position. Switches shall be mounted on and operated from the front of the switchboard. Switches shall have detents to securely hold the switch in the selected position.
- 324-1.2.7 [RFP] Indicator lights shall be flush mounted and shall incorporate two lamps under the lens and wired in parallel, or a long life LED. Bulb size and base shall be standard throughout the switchboard.
- 324-1.2.7.1 [RFP] Indicator lights shall be provided to indicate when the ship service generator motorized breakers are in the tripped position.

- 324-1.2.8 [RFP] Where the ABS HSNC Guide is silent COR SECTION 303. One spare circuit breaker of each frame size for each five active circuit breakers, or fraction thereof, shall be installed in the distribution section of the switchboard. One of these spare circuit breakers of each frame size in each switchboard shall be supplied with a trip element that is of a size equal to its frame rating. Other spare circuit breakers of each frame size in each switchboard shall be supplied with trip elements sized the same as those most frequently used throughout the switchboard distribution section.
- 324-1.2.9 [RFP] A diagrammatic wiring diagram of each switchboard section shall be framed and mounted on the inside of the rear hinged access cover for the appropriate section. The mounting shall include a protective clear coating which shall be acid resistant. In addition to showing point-to-point wiring, the diagrams shall also depict the system's setup, control and power sources.
- 324-1.2.9.1 [RFP] In addition to the paper copy of the wiring diagram each switchboard shall include an electronic memory device (Octave memory button or equal). This device will organize and store electronically all engineering, operating and parts data for the switchboard. As a minimum the device will have the following data groups: (1) machinery history, (2) drawings, (3) technical publication, (4) parts list (APL), and (5) maintenance data which includes log for maintenance accomplished. The memory device will not require power to maintain the data. It shall be accessible by the operator via any of the following devices: laptop, tablet PC or PDA. The operator shall be able to add or update the data easily using the any of the listed devices.
- 324-1.2.10 [RFP] Controls and equipment shall be installed for manual and automatic synchronizing and paralleling of any ship service generator with the ship service bus and the shore tie.
- 324-1.2.11 [RFP] Circuit breakers for the ship service generator, shore ties and bus ties shall be interlocked with the manual and automatic synchronization systems so as to prohibit being closed onto an energized bus without first being synchronized. The circuitry for the manual and automatic synchronization systems shall be independent to the extent that a failure on either system will not render the other synchronization system inoperable.
- 324-1.2.12 [RFP] A dead-front switchboard shall be provided in accordance with [IEEE C37.21](#).
- 324-1.2.13 [RFP] Where the ABS HSNC Guide is silent circuit breakers assemblies and other interrupting devices, control, instrumentation, and metering and protective and regulating equipment assemblies shall be in accordance with [IEEE-STD-C37.20.1](#).
- 324-1.2.14 [RFP] Short Circuit current withstand values shall be such that the mechanical aspects of the structure shall be capable of withstanding the short circuit current available at the switchboard with no breakage of the insulation and no permanent deformation of the bus bar (or some deformation that is insufficient to prevent the dielectric requirements from being met).
- 324-1.2.15 [RFP] Reverse Power Relays shall be supplied and shall be of inverse time versus current type.
- 324-1.2.16 [RFP] All generator control stations shall have available sufficient system control and monitoring capabilities to control all generating units that can be

attached in parallel. (Metering, Starting Engine Speed Governing, and Generator Voltage Control). This shall apply to backup or manual systems in addition to automated controls.

- 324-1.2.17 [RFP] Ground Detection. DC injection type grounding detection system with metering shall be provided. The meter shall be located on the face of the switchboard, load center or power panel. The metering system shall be provided with isolated contacts for remote summary alarm located in the pilothouse. There shall be a ground detection system installed on the first piece of distribution equipment after the power is generated or converted. Example: switchboard where the generators are attached or the first load center after a step down or isolation transformer etc.
- 324-1.3 [RFP] Power and lighting distribution panels shall be installed as required by system design. These panels shall be provided with a minimum of one spare circuit breaker for each five active circuit breakers or fraction thereof. The spares shall be of the size and type most frequently used within the panel.
- 324-1.3.1 [RFP] Circuit breakers shall not be used as switches for lighting or equipment. All motors regardless of horsepower shall have overload protection independent of the feeder breaker.
- 324-1.4 [A010] If required by the system design, any manual or automatic bus transfer switch shall be as compact as possible and shall be designed specifically for an ungrounded marine power system. All C4ISR transfer switches used shall meet the requirements of [MIL-PRF-32150](#) and be on the QPL for the specification. All manual transfer switches used shall meet the requirements of MIL-DTL-23928. All automatic transfer switches used shall meet the requirements of [MIL-PRF-17773](#).

324-2 [RFP] Test Requirements

- 324-2.1 [RFP] A certified letter shall be provided listing or test results from a NRTL indicating that each switchboard, distribution panel, and bus transfer device (if required by the design of the electrical distribution system) meets the test requirements specified in the following: ([CDRL 324-002](#))
- 324-2.1.1 [RFP] Bus Transfer Devices – [MIL-PRF-32150](#).

SECTION 330. [RFP] LIGHTING SYSTEMS**330-1 [RFP] General**

- 330-1.1 [RFP] This Section sets forth the requirements for the normal ship service, low level, and temporary lighting systems.
- 330-1.2 [RFP] Lighting calculations. All lighting calculations shall comply with [DOD-HDBK-289](#). ([CDRL 085-311](#)) Any supporting human factors requirements shall comply with ASTM F1166.

330-2 [RFP] Definitions

- 330-2.1 [RFP] General Illumination - The white illumination provided from all lighting fixtures on the overhead and bulkheads, except detailed lighting fixtures.
- 330-2.2 [RFP] Detail Illumination - The illumination provided for specific seeing tasks, such as provided by lights on desks, berths, and work bench.
- 330-2.3 [RFP] Special Illumination - The illumination provided by miscellaneous fixtures for purposes other than covered by general and detail lighting.
- 330-2.4 [RFP] Normal Ship Service Lighting System - The normal ship service lighting system consist of fixtures installed throughout the FRC-B for general and/or detail illumination. The only source of power for normal ship service lighting is the ship service power distribution system; see COR SECTION 320.
- 330-2.5 [RFP] Low Level (blue) Lighting System - the low level lighting system consist of a specific group of normal ship service lighting fixtures in all environmentally controlled compartments. The low level lighting system's source of power is the ship's service power distribution system. Blue is defined in [SAE J578](#).
- 330-2.6 [RFP] Emergency Lighting System - The emergency lighting system consists of a specific group of lighting fixtures dedicated to providing the FRC-B with reduced general illumination during times of loss of ship service power. The emergency lighting system primary source of power is the ship service power system. The emergency lighting system's alternate source of power is provided by individual self contained light supply packs.
- 330-2.6.1 [RFP] Emergency lighting circuits shall not automatically illuminate upon loss of primary power for fixtures in for the pilothouse.

330-3 [RFP] Design Standards and Criteria

- 330-3.1 [RFP] Lighting fixture construction, wiring, installation and power source requirements shall be in accordance with [46 CFR, Subchapter J](#), unless otherwise specified in this Section.
- 330-3.2 [RFP] Low level lighting fixture location criteria shall meet the requirements of Sections 331 and 332 of [NAVSEA S9AAO-AA-SPN-010/GEN-SPEC](#). The relay battle lantern requirements, cited in the reference, shall be provided by the emergency lighting system.
- 330-3.3 [RFP] Normal ship service lighting fixture location criteria shall meet the requirements of [46 CFR, Subchapter J](#).

330-4 [RFP] Performance and General Requirements

- 330-4.1 [RFP] Each lighting branch circuit shall be single phase and shall not exceed 150V rms. Each three phase lighting feeder shall be balanced to within 5% between phases under normal loading conditions.
- 330-4.2 [RFP] Lighting distribution in any compartment which has multiple power sources shall be arranged such that the failure of one circuit does not leave any area without light.
- 330-4.3 [RFP] Unless otherwise specified, fluorescent fixtures shall be used for interior lighting. If a compartment has normal, low level, and/or emergency lighting requirements, every effort shall be made to combine functions and minimize the number of fixtures required.
- 330-4.4 [RFP] Emergency lighting fixtures shall be capable of recharging its battery pack within a maximum of 24 hours. The self contained power source will energize the fixture only when there is a loss of power and not when the fixture is turned off. In addition to an emergency lighting system, the FRC-B shall have a temporary lighting system incorporating fluorescent fixtures with integral battery/charger for crew safety and cutter survivability in the event of loss of normal and emergency power.
- 330-4.5 [RFP] Fluorescent fixtures shall use rapid start type ballasts.
- 330-4.6 [RFP] Lighting fixtures shall be installed such that all exposed metal parts are at ground (ship's hull) potential at all times to ensure the safety of the FRC-B's crew.
- 330-4.7 [RFP] Portable rechargeable battery operated battle lanterns shall be installed at the entrance to the engine room(s), the steering space, the pilothouse, and the damage control lockers.
- 330-4.8 [RFP] The pilothouse battle lantern lens shall be blue, meeting the color requirements of COR Section 330-2.5.
- 330-4.9 [RFP] The aft floodlight lens shall be blue, meeting the color requirements of COR Section 330-2.5.
- 330-4.10 [RFP] Emergency egress routes shall be lit by emergency lighting and include egress route labeling to ensure that they are visible during low light or smoke conditions.

330-5 [RFP] Major Components

- 330-5.1 [RFP] Fluorescent Lighting Fixtures - Each fluorescent lighting fixture used shall be a marine-type and approved by Underwriter's Laboratories (UL) under [UL Standard 595](#) and have high power factor, rapid start type ballast and shall utilize either 17 or 20 watt tubes.
- 330-5.2 [RFP] Incandescent Lighting Fixtures - Each incandescent fixture used shall be a marine-type approved under [UL Standard 595](#). Incandescent fixtures shall be used where fluorescent fixture installations are impracticable (e.g., weather decks, unheated compartments etc.).
- 330-5.3 [RFP] Low Level Lighting Fixtures - Low level lighting fixtures shall be modified fluorescent and incandescent lighting fixtures. Each incandescent fixture used for low level lighting, shall have a blue lens, with blue defined in accordance with COR Section 330-2.5. Fluorescent fixtures, used for low level lighting, shall have

a minimum of two tubes. This fixture shall be modified by placing a blue filter over the center tube(s), as necessary, to achieve the required lighting levels. The fluorescent fixture is preferred for low level lighting.

- 330-5.4 [RFP] Emergency Lighting Fixtures - Each emergency lighting fixture shall be a fluorescent fixture. The fixture shall have two tubes and a completely self-contained light supply pack. The supply pack shall consist of a rechargeable battery, and an encapsulated inverter/charger. The charger shall operate on the lighting system nominal voltage and shall not interfere with the fixture's normal function. In the event of a power outage, the battery shall illuminate the center tube of the fixture as required in COR SECTION 330. The fixture shall be constructed such that it provides the operator with a visual indication of the battery pack and charging system status. Emergency lighting circuits shall not provide power automatically to the pilothouse fixtures.
- 330-5.5 [RFP] Miscellaneous Lighting Fixtures - Fixtures for detail illumination shall be specifically chosen for the visual task required.
- 330-5.6 [RFP] Lighting Control Switches - Switches shall be chosen based on the type of control required. The minimum requirements are:
- 330-5.6.1 [RFP] Double pole, single throw (DPST) switches shall be used to control lighting in compartments which have only normal lighting, one access and receives power from the normal ship service lighting system. The switch shall break both sides of the lighting circuit.
- 330-5.6.2 [RFP] 3-way (Single pole, double throw (SPDT)) switches shall be used to control lighting in compartments which have multiple accesses, only normal lighting and receives power from the normal ship service lighting system.
- 330-5.6.3 [RFP] Single pole, triple throw (SP3T) switches shall be used to control lighting in compartments which require normal lighting, off position and low level (blue) lighting.
- 330-5.6.4 [RFP] The control switch for the fluorescent lighting fixtures in the pilothouse shall be fitted to prevent accidental energizing of the lights.
- 330-5.6.5 [RFP] All normal lighting shall be controlled through switches. Lighting shall not be controlled through circuit breakers.
- 330-5.6.6 [RFP] Door switches shall be provided for the control of lights for darken ship operations. Occasional by-passing of door switches may be necessary in such spaces in order to meet operational exigencies such as boarding operations during darkened-ship. Therefore, the installation of lights in these spaces shall be such that no direct light is exposed to view outside the ship and any indirect light passing through hatches or other openings is subdued to a minimum. This shall be generally accomplished by judicious location and shielding of fixtures.

330-6 [RFP] Monitoring, Alarms and Control

- 330-6.1 [RFP] Light switches shall be used only in normal and low level lighting systems. On the main deck and above, filtered tubes shall be used for all emergency lighting fixtures. Below the main deck, unfiltered tubes shall be used for all emergency lighting fixtures. The tube used for the emergency lighting shall be the tube connected to the supply pack; see COR Section 330-2.6.

- 330-6.2 [RFP] Switches controlling lighting in hazardous compartments (as defined by ABS Guide) shall be located outside the compartment; see COR SECTION 320. All other switches shall be located inside the compartment they serve.

330-7 [RFP] Material and Material Certification

- 330-7.1 [RFP] All exterior lights shall be constructed of bronze, brass, or FRP unless otherwise specified.

330-8 [RFP] Test Requirements

- 330-8.1 [RFP] Factory Tests - A certified letter shall be provided listing the test results from a NRTL indicating that each type of lighting fixture provided meets the test requirements specified in [UL 595](#). For NRTL criteria, see COR Section 300-6.1.1. ([CDRL 330-001](#)).

SECTION 332. [RFP] ILLUMINATION REQUIREMENTS**332-1 [RFP] General**

- 332-1.1 [RFP] This Section sets forth the requirements for general, special, blue and emergency illumination, and floodlights.
- 332-1.2 [RFP] Lighting fixtures shall be installed in the numbers and locations required to provide the general illumination levels specified in the [DOD-HDBK-289](#). The Contractor shall prepare lighting calculations for the entire FRC-B in accordance with the method in DOD-HDBK-289 ([CDRL 085-311](#))

332-2 [RFP] General Illumination

- 332-2.1 [RFP] Where a compartment serves two or more functions, the level of illumination provided shall be specified for the primary function of the compartment. Higher levels of illumination than that required by the primary function of the compartment shall be provided only in those secondary function areas requiring such a higher level of illumination.
- 332-2.2 [RFP] Overhead lighting fixtures shall be installed to provide uniform illumination throughout a compartment without contrasting light and dark areas. In arranging fixtures to provide a uniform level of illumination, they shall be spaced to provide maximum illumination on working surfaces. Lighting shall be arranged to avoid shadows cast on working surfaces by stationary obstructions or by personnel as they perform their normal duties in that compartment. Spacing between lighting fixtures and bulkheads shall provide substantially uniform illumination on shelves, racks or vertical surfaces without spotty light distribution, dark areas, or dark corners.
- 332-2.3 [RFP] Lighting shall be designed and located to avoid glare from working and display surfaces as viewed from the normal working position. The maximum luminance ratio between any two sources of luminance light shall not exceed 5:1. To reduce glare, non-reflective or matte finished surfaces shall be provided on consoles, panels and other work surfaces. The placement of smooth surfaces within 60 degrees of a normal visual field shall be avoided.

332-3 [RFP] Special Illumination

- 332-3.1 [RFP] A limited number of permanent yellow lighting fixtures shall be installed on the weather decks. The number provided shall be the minimum required to outline the following areas and conditions to permit ready safe passage of personnel.
- 332-3.2 [RFP] Ladders, walkways, obstructions such as reels, capstans, low or narrow passageways, and changes in deck level shall be illuminated. Walkways having bends and corners shall have a fixture located to permit visibility from both sides of the corner or bend.
- 332-3.3 [RFP] Bulkhead-mounted weather deck lighting fixture shall be mounted such that they meet the minimum head clearance of COR Section [071](#). These fixtures shall be supported on brackets extended out from bulkheads so that the light will not be obstructed by objects located in the vicinity.
- 332-3.4 [RFP] Floodlights shall be installed on weather deck structure to provide sufficient illumination for operation of all deck equipment, including the Cutter Boat.

- 332-3.5 [RFP] Lighting shall be provided to facilitate nighttime Cutter Boat launch and recovery operations. This lighting shall not interfere with the Cutter Boat Coxswain's ability to safely maneuver the Cutter Boat in the vicinity of the FRC-B. The use of rope fiber optic lighting is preferred.
- 332-3.6 [RFP] Upward-directed flood lights shall be provided port and starboard to illuminate the national ensign and the Coast Guard ensign as displayed from the main mast while underway. These lights shall be shielded in such a way that they cannot be confused with the navigational lights and so that no light is cast on operating personnel in the normal positions.
- 332-3.7 [RFP] Portable lights and brackets shall be provided to illuminate the Coast Guard stripe displayed on the bow port and starboard. These lights shall be shielded so as not to shine on operating personnel or toward the pilothouse.
- 332-3.8 [RFP] Flood lights shall be provided port and starboard on the superstructure to illuminate alongside operations up to 5m (16.4 ft) from the side of the hull.
- 332-3.9 [RFP] The flag, hull illuminating, and flood lights shall be switch controllable from the pilothouse. Circuit breakers shall not be used as switches.
- 332-3.10 [RFP] Florescent light fixtures shall be provided underneath all galley cabinets located above counter space.
- 332-3.11 [RFP] Where night vision device compatibility is required, the spectral output from all light emitting from or illuminating a display should not be more than 600 nm in wavelength and shall be continuously variable to the full OFF position (zero illumination).

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 400 – Command, Control, Communication

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SECTION 400. [RFP] COMMAND AND SURVEILLANCE**400-1 [RFP] Scope**

- 400-1.1 [RFP] This Section sets forth the general requirements for the FRC-B command and surveillance system including sensors, command and control, and communications, and supplements the detail requirements specified in other Sections of this COR.
- 400-1.2 [RFP] The FRC-B shall be designed, constructed, certified and classed to the requirements of the [ABS HSNC Guide](#) to meet the classification requirements in COR Section [070](#). Follow-on sections of the COR identify exceptions or additions to the ABS HSNC Guide requirements.

400-2 [RFP] Performance and General Requirements

- 400-2.1 [RFP] Workmanship of all electronics installations shall comply with Guideline 9 of [MIL-HDBK-454](#).
- 400-2.2 [RFP] Cables selected for the interconnection of interior communication and electronic circuits shall have the required number of spare conductors as indicated in [Table 400-1](#). This table applies only to cables which penetrate a deck or fire-rated/watertight bulkhead. Spare conductors shall not be required for special application cables, such as multi-conductor shielded cable or OEM cables, unless otherwise specified.
- 400-2.3 [RFP] CFE electronic equipment shall operate as specified in this COR for at least 500 hours, continuously or intermittently, without the necessity for readjustment of any controls which are normally inaccessible to the operator during system operations.
- 400-2.4 [RFP] CFE electronic equipment shall perform within its specified parameters under the conditions set forth in COR [Section 070](#).
- 400-2.5 [RFP] CFE electronic equipment shall operate within its specified parameters using power as specified in COR [Section 300](#).
- 400-2.6 [RFP] Throughout the Command and Surveillance Sections of this COR, wherever [IEEE-STD-45](#), Recommended Practice for Electrical Installations on Shipboard, is referenced, the recommendations contained therein shall be interpreted as requirements. Throughout the text of IEEE-STD-45, the word "shall" shall be substituted for the words "may" or "should", and the word "required" shall be substituted for the word "recommended".
- 400-2.7 [RFP] The FRC-B shall have a 10% service life growth margin at delivery for internal and external communications circuits and components.

Table 400-1 Spare Conductors

CONDUCTORS OR PAIRS	MULTI-CONDUCTOR (SPARE CONDUCTORS)	TWISTED PAIR (SPARE CONDUCTORS)
2	0	-
3	0	1
4	1	-
5	-	1

CONDUCTORS OR PAIRS	MULTI-CONDUCTOR (SPARE CONDUCTORS)	TWISTED PAIR (SPARE CONDUCTORS)
7	1	-
10	1	1
14	2	-
15	-	2
19	3	-
24	3	-
30	4	-
37	4	-
44	5	-

400-3 [RFP] Design Standards and Criteria

- 400-3.1 [RFP] All parts, subassemblies, cards, modules, and units intended as replacement items shall be form, fit and function interchangeable in accordance with Guideline 7 of [MIL-HDBK-454](#).
- 400-3.2 [RFP] Cables selected for interconnection of interior communications and electronic equipment shall be low smoke type and conform to [MIL-DTL-24643B](#) or [MIL-DTL-24640](#) for construction and testing. Cable designation labeling for all electronic cables shall meet the requirements of [NAVSEA S9AA0-AA-010/GEN-SPEC](#), Section 305 and 400e. All cable installation shall follow the directions in [DOD-STD-2003-1\(1\)](#). Cable shall be segregated to prevent EMI/RFI by following the practices in NAVSEA handbook [S9407-AB-HBK-010](#). In cases where vendor supplied C4ISR system or component cables do not meet low smoke or watertight standards and a suitable alternative cannot be identified, use of vendor unique, non conformant cable requires prior approval of the Contracting Officer.
- 400-3.3 [RFP] Equipment which is to be installed in the pilothouse shall be designed for ruggedized commercial use in a marine environment. COTS electronic equipment shall meet the general requirements of [MIL-HDBK-2036](#).
- 400-3.4 [RFP] Equipment which is to be installed in exterior locations shall be watertight as defined in [NEMA PUB ICS 6](#) or [ABS HSNC 4-8-3 Table 2](#), "Minimum Degree of Protection (2006)".
- 400-3.5 [RFP] Maximum operational availability of all electronic equipment is a design objective. Reliability expressed in terms of Mean Time Between Failures (MTBF) shall be 2,500 hours or more, and Mean Time To Repair (MTTR) shall be not more than 0.5 hours.
- 400-3.6 [RFP] The infrastructure shall comply with [Navy IA 5239-31](#) (Shipboard RED/BLACK Installation Guidance), [Navy IA 5239-22](#) (Protected Distribution Systems), [MIL-STD-1310G](#), and the National Security Telecommunications and Information Systems Security [TEMPEST/2-95](#), RED/BLACK Installation Guidance
- 400-3.6.1 [A013] Reserved.

- 400-3.7 [RFP] All electronic equipment shall meet the control, maintenance and safety requirements of [ASTM F1166](#). Additionally, equipment installation shall ensure that human exposure to RF fields meets the safety requirements of [IEEE STD C95.1](#).
- 400-3.8 [RFP] When equipment is rack-mounted, it shall be installed in commercially available 482.6mm (19 in) vertical electronics racks with a depth of no less than 772.2mm (30.4 in) which comply with [EIA/CEA-310-E](#). The rack frames, bases and frame channels shall be manufactured of 14-gauge, or thicker, cold rolled steel. Adjustable panel and equipment mounting angles shall be manufactured of 11-gauge, or thicker, steel. The racks shall incorporate all necessary cable and power management and ventilation to support the installed equipment.
- 400-3.8.1 [RFP] A minimum 20% unused space shall be designed into each electronics rack arrangement for future growth.
- 400-3.8.2 [RFP] Blank closure panels shall be used to cover open spaces in all electronics racks. Louvered plates and fans may be used to reduce heat buildup inside electronics racks but these shall not be included as part of the minimum unused space required above.
- 400-3.9 [RFP] Sun glare screens shall be provided for all pilothouse displays.
- 400-3.10 [A010] The infrastructure shall comply with [MIL-STD-464A](#) (Electromagnetic Environmental Effects Requirements for Systems) to ensure systems are electromagnetically compatible among all subsystem and equipment within the systems and with the environments caused by electromagnetic effect external to the system.
- 400-3.10.1 [A010] Electromagnetic Environmental Effects (E3) Integration and Analysis Report (E3IAR) shall be submitted in accordance with [CDRL 400-001](#).
- 400-3.10.2 [A010] E3 Verification Procedures (E3VP) shall be submitted in accordance with [CDRL 400-002](#).
- 400-3.10.3 [A010] E3 Verification Report (E3VR) shall be submitted in accordance with [CDRL 400-003](#).
- 400-3.11 [A014] Spectrum certification is required for all systems that radiate electromagnetic energy into the atmosphere. The National Telecommunication and Information Administration (NTIA) is the Executive Branch's telecommunication policy advisor to the President and the manager of all Federal Government spectrum use.
- 400-3.11.1 [A014] A Spectrum Planning Subcommittee (SPS) application will be submitted for all systems that do not have SPS Certification by the Government in accordance with the [Manual of Regulations and Procedures for Federal Radio Frequency Management](#), Chapter 10. Equipment that contains a FCC part 15 ID label does not require spectrum certification. The following data shall be provided to support the application process.
- 400-3.11.1.1 [A014] Equipment Certification Cover Letters shall be submitted in accordance with [CDRL 400-004](#) for each communication - electronics system.
- 400-3.11.1.2 [A014] Transmitter Equipment Characteristics Reports shall be submitted in accordance with [CDRL 400-005](#) for each component without a FCC part 15 ID label or SPS certification.

- 400-3.11.1.3 [A014] Receiver Equipment Characteristics Reports shall be submitted in accordance with [CDRL 400-006](#) for each component without a FCC part 15 ID label or SPS certification.
- 400-3.11.1.4 [A014] Antenna Equipment Characteristics Reports shall be submitted in accordance with [CDRL 400-007](#) for each component without a FCC part 15 ID label or SPS certification.
- 400-3.11.2 [A014] In accordance with NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management, Special Temporary Authorization (STA) for experimental Test and Evaluation shall be obtained.
- 400-3.11.3 [A014] Permanent operating frequency assignments and spectrum lifecycle support of the equipment will be the responsibility of the Government, post-delivery.

SECTION 401. [RFP] GENERAL ARRANGEMENT OF COMMAND AND SURVEILLANCE SYSTEMS**401-1 [RFP] Scope**

401-1.1 [RFP] This Section sets forth the general requirements for arrangement of the command and surveillance systems aboard the FRC-B.

401-2 [RFP] Definitions

401-2.1 [RFP] The electronic systems are comprised of functional subsystems defined as follows:

401-2.1.1 [RFP] Command and Control. - A combination of equipment required to collect, analyze, process, display, and relay data received from sensors and position the FRC-B.

401-2.1.2 [RFP] Navigation. - A combination of equipment used to determine the position, course, and speed of the FRC-B.

401-2.1.3 [RFP] Communications. - A combination of equipment used to convey, in all forms, information from one point to another.

401-3 [RFP] Performance and General Requirements

401-3.1 [RFP] Accessibility. - Equipment shall be located to provide space for operation, maintenance, adjustment, and repair as identified on the installation control drawings or technical manuals.

401-3.2 [RFP] Permanently installed equipment shall be kept clear of routes required for removal of equipment or machinery and clear of normal traffic routes.

401-3.3 [RFP] Equipment such as switch panels and fuse boxes shall be installed to be accessible for switching, testing and fuse replacing.

401-3.4 [RFP] Pressurized antennas and tuner coupler groups, not accessible for servicing, shall have remote filler tubes and gauges in readily accessible locations.

401-3.5 [RFP] Hand operated controls, devices, and manually operated switches shall be grouped and located to permit convenient use by operators at their normal duty stations in accordance with [ASTM F1166](#).

401-3.6 [RFP] Switches controlling any single electronic equipment shall be grouped and located so as to minimize the possibility of inadvertent switching of other equipment.

401-3.7 [RFP] Electronic equipment installed in exposed locations shall have operating controls facing aft, except where the operator's duties do not permit him to face forward. Instruments that are weather-exposed or may be subject to salt spray, dirt, or moisture under any operating condition shall be installed in a manner which minimizes prolonged continuous exposure.

401-3.8 [RFP] Where shielded cables are used within the hull, the cable shield shall be properly terminated (360° grounded) at one end only, unless recommended otherwise by the equipment manufacturer or required otherwise in this COR. RF shielded cables shall be grounded at each end. TSEC related cables shall be grounded at both ends. Shields of cables routed top side or exposed shall be grounded 360° at connectors, junction boxes, and at the weather deck or

weather bulkhead penetration point. In addition, metal pipe and conduits routed in top side areas shall be grounded at the point of penetration.

- 401-3.9 [A009] Alternating current operated electronic equipment shall be supplied power by shielded-type isolation transformers. Each system shall have its own isolation transformer which may be provided either integral to the equipment or as part of the system installation. Grounds from individual isolation transformers shall be returned to a single location; such as a power panel, a primary electronic load center, or the ship service generator switchboard.
- 401-3.10 [RFP] Cooling shall be provided or equipment shall be located to prevent overheating. Equipment dissipating heat shall be arranged so as to prevent the potential for creating heat zones or hot pockets within a compartment. Equipment shall not be located above or adjacent to heat producing elements such as piping or ducts.
- 401-3.11 [RFP] Electronic equipment shall be located away from fluid spray, drip splash, or blown droplets. When such locations cannot be avoided, the equipment shall be protected from those elements. Exposed electrical equipment in the vicinity of where personnel could potentially be working, including the inside of the bridge consoles, shall have guards to prevent electrical shock or shorting of equipment.
- 401-3.12 [RFP] A Computer Wire Data List shall be prepared and delivered as a Microsoft Access® data base. ([CDRL 401-001](#))

401-4 [RFP] Design Standards and Criteria

- 401-4.1 [RFP] Shock mounts, provided as part of electronic equipment, shall not be replaced with any other type or size unless prior authorization is provided by the Contracting Officer.
- 401-4.2 [RFP] Installation of electronic systems shall comply with equipment manufacturers' instructions. When installation instructions are not included with the equipment, installation shall be as specified in [NAVSEA 0967-LP-000-0100](#) and [NAVSEA 0967-LP-000-0110](#). In case of conflict between these two publications, the requirements of the latter shall prevail.

SECTION 403. [RFP] PERSONNEL SAFETY**403-1 [RFP] Scope**

- 403-1.1 [A013] This Section describes the equipment and personnel safety requirements for the FRC-B. Implemented safety procedures shall comply with [NAVSEA 0967-LP-000-0100](#), Section 3, [COMDTINST M10550.25B](#), Chapter 2, and [COMDTINST M5100.47](#). Marking Physical Hazards for proper lettering and color markings for electronic and electrical equipment shall be performed in compliance with [COMDTINST M10360.3C](#) and [ANSI Z535 Safety Color Code](#). Physical personnel safety shall also comply with COR Section [077](#).

403-2 [RFP] Performance and General Requirements

- 403-2.1 [RFP] Shorting probes, “dead man” sticks, and safety markings shall be provided and installed in accordance with the references listed in COR Section 403-1.1.

403-3 [RFP] Material and Material Certification

- 403-3.1 [A013] In the event that safety precautions contained herein conflict with those contained in other publications such as Naval or other Coast Guard Publications, Technical Manuals, etc., [COMDTINST M10550.25B](#), Electronics Manual, and [COMDTINST M5100.47](#), Safety and Environmental Health Manual shall take precedence.

403-4 [RFP] Design Standards and Criteria

- 403-4.1 [RFP] Protection of personnel against Hazards of Personnel, Electromagnetic Radiation to Personnel (HERP), to fuels (HERF), and to ordnance (HERO) shall meet the requirements in [NAVSEA Pub OP3565](#). The general safety requirements documented in [MIL-HDBK-454](#) and section 3 of [OPNAVINST 5100-19](#) shall be followed.

SECTION 404. [RFP] RF TRANSMISSION LINES**404-1 [RFP] Scope**

- 404-1.1 [RFP] This Section sets forth the general requirements for the FRC-B's radio frequency cabling and provides guidelines for installation. This Section also addresses the FRC-B's radar cable requirements.

404-2 [RFP] Performance and General Requirements

- 404-2.1 [RFP] Radio frequency transmission lines shall meet the following general and installation requirements:
- 404-2.1.1 [RFP] Be kept to a minimum length.
 - 404-2.1.2 [RFP] Located to provide protection from mechanical abuse and heat damage.
 - 404-2.1.3 [RFP] Located to avoid physical or electrical interference with equipment, cables, or other radio frequency transmission lines.
 - 404-2.1.4 [RFP] Electrically balanced wherever necessary.
 - 404-2.1.5 [RFP] The entrance of moisture and dirt shall be prevented. Non-solid dielectric lines shall be installed so there are no pockets in which moisture can collect.
 - 404-2.1.6 [RFP] Installed so that the characteristic impedance of each line is not materially changed.
 - 404-2.1.7 [RFP] Installed so that they will not be disturbed by removal of deck plates, gratings, or machinery.
 - 404-2.1.8 [RFP] Installed so as not to impair the airtight or watertight integrity of decks or bulkheads. Penetration of ship structure shall comply with the structural requirements of COR Sections 100 through 180.
- 404-2.2 [RFP] When installing cable, force shall not be applied which changes the dimension of or otherwise damages the cable. For cable with a polyethylene dielectric, the maximum operating temperature is 85°C. For cable with a polytetrafluoroethylene dielectric, the maximum operating temperature is 200°C. Cables shall not be installed in areas where the ambient temperature, plus the center conductor temperature rise, exceeds the maximum temperature rating of the cable unless special cooling is provided.

404-3 [RFP] Coaxial Cable

- 404-3.1 [RFP] Standard methods shown in publication [NAVSEA 0967-LP-000-0110](#) shall be used for:
- 404-3.1.1 [RFP] Entry of coaxial cables to accessories, equipment, and wiring boxes.
 - 404-3.1.2 [RFP] Passing coaxial cable through bulkheads.
 - 404-3.1.3 [RFP] Protection of cable against heat, condensation, and mechanical damage.
 - 404-3.1.4 [RFP] Supporting and securing cable to decks and bulkheads.
- 404-3.2 [RFP] Coaxial cables shall be installed so that equipment servicing, equipment deflection, deflection of bulkheads, and maximum movement of expansion joints

will not subject the cable to tension or shear damage. Sag between hangers shall be uniform for each row of cables in racks so that the clearance between rows will be the same throughout the cable run. Sag shall be limited to that allowed for electric cable in similar runs. Whenever cables enter stuffing tubes, the angle of approach shall be such as to allow tightening of gland nuts without the necessity of flexing cables.

- 404-3.3 [RFP] Coaxial cables shall not be secured directly to bulkhead plating, but shall be supported on beams or hangers.
- 404-3.4 [RFP] Coaxial cable shall enter equipment enclosures in accordance with the following:
- 404-3.4.1 [RFP] Watertight. - Through stuffing tubes in locations as provided on the equipment and best suited to the disposition of the cable.
- 404-3.4.2 [RFP] Non-watertight. - Through cable clamps, [FED-SPEC A-A-50552](#), located in bottom or sides of the enclosure; if top entrance is more practicable, stuffing tubes shall be used.
- 404-3.5 [RFP] The inside bend radius of coaxial cable shall be more than 10 times the cable diameter, except when the cable is subject to repeated flexure, in which case the inside bend radius shall be more than 20 times the cable diameter.
- 404-3.6 [RFP] Terminal boxes, branch boxes, or other forms of standard electric wiring equipment shall not be used to terminate or connect coaxial cable. Coaxial cable shall not be spliced.

404-4 [RFP] Cable Routing

- 404-4.1 [RFP] Cables forming parts of different electronic circuits shall be routed in separate wireways wherever practicable. Cables shall be routed on the inboard side of beams or other supporting structures to provide additional protection. Cables shall be located so that the maximum number of circuits will be maintained in service in case of casualty to a single area. Cables near hydraulic fluid piping shall have drip-proof shields or other barriers installed to protect from leak damage. In addition, cables throughout the FRC-B shall be installed to meet the shielding and grounding requirements of [MIL-STD-1310](#).
- 404-4.2 [RFP] Wherever watertight equipment (having no standard non-watertight equivalent) is installed in compartments or systems which do not require the equipment to be watertight, the cable entrances shall be made as prescribed for non-watertight enclosures in COR Section 404-3.4.2.
- 404-4.3 [RFP] Stuffing tubes or multi-cable transits shall be used for passing coaxial cables and non-coaxial through airtight, fume-tight, or light-tight decks or bulkheads.
- 404-4.4 [RFP] Bushings and collars shall be used wherever cables penetrate non-tight bulkheads and decks.

404-5 [RFP] Design Standards and Criteria

- 404-5.1 [RFP] Radio frequency transmission lines shall be installed to meet the requirements of COR [Section 304](#), unless otherwise specified in this COR Section.
- 404-5.2 [RFP] Coaxial Cable and Hardware.

- 404-5.2.1 [A010] Coaxial cables and connectors shall comply with either [MIL-PRF-39012E](#) or [MIL-PRF-55339C](#) and [MIL-C-17](#)/(180 through 217). They shall be selected based upon the characteristic impedance, voltage rating, and power rating for the frequency at which the cable will be used.

404-6 [RFP] Materials and Material Certification

404-6.1 [RFP] Selection of Coaxial Cables and Fittings.

- 404-6.1.1 [RFP] All cables shall be of low smoke and zero halogen construction.
- 404-6.1.2 [RFP] All cable connectors exposed to weather shall be waterproofed using silicone grease impregnated heat shrink tubing. RTV or similar compounds shall not be used. For VHF-FM systems only, provide RG-213 cable for the antenna runs, terminated at the antenna end with the antenna manufacturer's recommended connector and terminated at the transceiver end with UG-21 D/U connectors. For VHF-ADF systems only, provide RG-58 cable for the antenna runs, terminated at both ends with the antenna and receiver manufacturer's recommended connectors. For UHF systems only, provide RG-217 cable for the antenna runs, terminated at both ends with UG-204EU connectors. No pigtails are required. If the UHF systems antenna runs are of a length where the loss through the cable exceeds the manufacturer's requirements, Helix cable may be used with pigtails.

- 404-6.1.2.1 [A010] LMR cable shall not be used. For applications where LMR cable is recommended, cables conforming to [MIL-DTL-17/223](#), or other appropriate standard as required in COR Section 404-5.2.1, shall be used.

- 404-6.1.3 [A010] Connectors shall be selected on the basis of the cable to be used, the function to be performed and the system with which to be interfaced.

404-6.1.3.1 [A010] Reserved.

404-6.1.3.2 [A010] Reserved.

404-6.1.3.3 [A010] Reserved.

404-6.1.3.4 [A010] Reserved.

404-6.1.3.5 [A010] Reserved.

404-6.1.3.6 [A010] Reserved.

404-6.1.3.7 [A010] Reserved.

404-7 [RFP] Test Requirements

- 404-7.1 [RFP] After installation, all Coaxial and radar cables shall be tested in accordance with COR Section [095-11.20](#). The results of these tests shall be provided to the Government. ([CDRL 092-002](#))

SECTION 405. [RFP] ANTENNA REQUIREMENTS**405-1 [RFP] Scope**

- 405-1.1 [RFP] This Section sets forth the general requirements for the FRC-B's antennas and their locations. This Section also addresses the maximum allowable personnel exposure to radio frequency radiation.

405-2 [RFP] Definitions

- 405-2.1 [RFP] Antennas include communication antennas, radar antennas and pedestal systems, navigation antennas, and the FRC-B's entertainment antenna (TV/FM and Satellite).

405-3 [RFP] Performance and General Requirements

- 405-3.1 [RFP] All antennas shall be recommended by the equipment manufacturer for marine service.
- 405-3.2 [RFP] Antennas shall be installed in accordance with manufacturer recommendations. Remotely controlled units used in antenna circuits shall be located to ensure that the system meets performance parameters. Coating material shall not be applied to ceramic or phenolic insulation material forming a part of the antenna installation.
- 405-3.2.1 [RFP] The antenna for the RDF required in COR Section 423-3.1.1 shall be installed at the top of the mast unless otherwise specified by the manufacturer.
- 405-3.3 [RFP] Surface search radar antenna foundation(s) shall be parallel to the FRC-B's baseline to within 30 arc minutes. The 0° and 180° degree reference lines of the radar antenna foundation(s) shall be parallel to within 30 arc minutes of the FRC-B's centerline and off-set not more than 6mm from the FRC-B's centerline plane. The radar antenna(s) shall be mounted at or above the height necessary to enable the radar(s) to meet the performance requirements of COR Section 451-1.
- 405-3.4 [RFP] Antennas shall not be located on the centerline forward of the helm position, or in any position which limits the use of other machinery or mechanical equipment. Antennas shall be located so that personnel exposure limits do not exceed those specified in [IEEE C95.1](#).

405-4 [RFP] Design Standards and Criteria

- 405-4.1 [RFP] All antenna installations shall follow the requirements of volume 1 of [NAVSEA 0967-LP-177-3010](#) and [NAVSEA 0967-LP-177-3020](#).
- 405-4.2 [RFP] Radiation patterns shall be provided for each antenna. These shall be used to determine the correct placement of each antenna to prevent interference with other antennas or structure. ([CDRL 405-001](#))
- 405-4.3 [RFP] All antennas shall meet the environmental requirements listed in COR [Section 070](#). In addition, they shall be selected and installed to meet any environmental conditions in excess of those in COR [Section 070](#) that are created by the FRC-B, such as diesel engine exhausts, etc.

SECTION 406. [RFP] GROUNDING, BONDING, AND ELECTROMAGNETIC INTERFERENCE REDUCTION**406-1 [RFP] Scope**

- 406-1.1 [RFP] This Section sets forth the basic requirements for the FRC-B's grounding and bonding system. This Section also defines the standards for the reduction of Electromagnetic Interference (EMI).

406-2 [RFP] Definitions

- 406-2.1 [RFP] EMI is impairment of the reception of a wanted electromagnetic signal caused by electrostatic disturbance.

406-3 [RFP] Performance and General Requirements

- 406-3.1 [RFP] Interference conditions which are due to inherent deficiency in GFE shall be brought to the attention of the Coast Guard promptly after the discovery of the interference condition.
- 406-3.2 [RFP] Safety rails, lifelines, and lanyards shall not generate EMI.
- 406-3.3 [RFP] Cables shall be routed within the FRC-B structure to protect against electromagnetic interference. Cables that must be routed to topside or exposed locations shall be shielded, either by use of shielded cables or by use of single or multi-cable conduit, or both.
- 406-3.4 [RFP] Electromagnetic Interference (EMI) shall be tested in accordance with [MIL-STD-1605](#). Any unacceptable EMI shall be corrected in accordance with [MIL-STD-461](#).
- 406-3.5 [RFP] Equipment and devices which are adversely affected by electromagnetic coupling shall be located and oriented for minimum coupling.
- 406-3.6 [RFP] Equipment and electronic systems which can interact due to electromagnetic or electrostatic fields shall be separated or shielded.

406-4 [RFP] Design Standards and Criteria

- 406-4.1 [RFP] [NAVSEA 0967-LP-000-0150](#) shall be followed to reduce interference.
- 406-4.2 [RFP] Grounding and bonding requirements, methods, and materials shall conform to [MIL-STD-1310](#) and publication [NAVSEA 0967-LP-000-0110](#).

SECTION 410. [RFP] SHIP COMMAND AND CONTROL SYSTEMS**410-1 [RFP] Scope**

- 410-1.1 [RFP] This Section sets forth requirements for the arrangement of ships command and control (C2) and navigation stations.

410-2 [RFP] Performance and General Requirements

- 410-2.1 [RFP] The primary control station for operation of the vessel shall be located in the pilothouse. Controls for all equipment necessary for the underway operation of the vessel, for the navigation of the vessel, and for communication with other vessels and shoreside stations shall be located in the pilothouse.
- 410-2.2 [A013] The USCG Command and Control Engineering Center (C2CEN) developed a C2 system for Coast Guard 110' Island Class Patrol Boats called the Shipboard Command and Control System – 110 (SCCS-110). [SCCS-110](#) is the basis for the C2 system for the FRC-B which will be named SCCS-FRC. The SCCS-FRC software application will be provided as GFI. The Coast Guard will install and integrate the SCCS software on the contractor furnished equipment required in COR Section 425-2. The [SCCS-110 Block Diagram](#) is provided as a reference for proposal development.
- 410-2.2.1 [A013] In addition to the sensors listed in COR Section 425-1.1, the SCCS shall interface with:
- 410-2.2.1.1 [A013] The EO-IR sensor, specified in COR Section 457-1.
- 410-2.2.1.1.1 [A013] Reserved.
- 410-2.2.1.1.2 [A013] Reserved.
- 410-2.2.1.1.3 [A013] Reserved.
- 410-2.2.1.2 [A013] STEDS (COR Section 410-6).
- 410-2.2.1.3 [A013] The RDF, specified in COR Section 423-3.1.1.3.1.
- 410-2.2.2 [A009] Reserved.
- 410-2.2.3 [RFP] Two mock-ups of the C2/SCCS suite (including the equipment/connections required by COR Section 425-1.1 shall be provided with all of the hardware and connected sensors necessary to simulate operation and demonstrate the proper integration of all of the CFE equipment with the GFE software. One will be retained at the contractor's facility and one will be delivered to the USCG C2CEN in Portsmouth, VA for engineering/software development. Each mock-up shall be identical to the other. Once a successful demonstration has been achieved, the mock-up at the contractor's facility will remain intact as a training aid for crew and support personnel.
- 410-2.2.3.1 [RFP] The SCCS mockups shall be installed in electronics racks which comply with COR Section 400-3.8.
- 410-2.3 [RFP] The FRC-B Pilothouse shall have a 360° view of the horizon. It shall be a command and control center providing a single location for all C2 functions required for mission decision-making. It shall provide maximum visibility in all operating conditions for navigation; with visual and manual accessibility of all controls, equipment, and gauges. The placement of all devices shall allow

manual operations and allow displays and controls to be readable both day and night. It shall allow the Engineering Officer of the Watch (EOW) to monitor the Machinery Control Monitoring System (MCMS), required in COR [Section 202-1](#).

- 410-2.4 [RFP] Design of the consoles and the controls, displays, alarms and integration therein shall comply with [ASTM F1166](#).

410-3 [RFP] Design Standards and Criteria

- 410-3.1 [A010] The control system shall also comply with the [ABS Guide for Bridge Design and Navigational Equipment/Systems](#) with "NIBS" Notation, (except that a single gyrocompass is required, per COR Section 437-2) and "ABS Ergonomic Design of Navigational Bridges".

410-4 [RFP] Control Console

- 410-4.1 [RFP] The FRC-B control console shall be located in the pilothouse on the FRC-B's centerline, arranged so that the helmsman is facing forward, with unobstructed vision forward and to the sides of the vessel. At a minimum, the control console shall include the following equipment:

- 410-4.1.1 [RFP] Steering controls.
 - 410-4.1.2 [RFP] Propulsion system controls including throttle and gear controls, engine start and stop controls, and emergency engine shutdown controls.
 - 410-4.1.3 [RFP] Propulsion gauges.
 - 410-4.1.4 [RFP] Magnetic Compass.
 - 410-4.1.5 [RFP] Fluxgate Magnetic Compass.
 - 410-4.1.6 [RFP] Gyrocompass display, COR Section 437-2.
 - 410-4.1.7 [RFP] Searchlight Control.
 - 410-4.1.8 [RFP] Rudder angle indicator, COR Section 437-4.
 - 410-4.1.9 [RFP] Autopilot controls.
 - 410-4.1.10 [RFP] Whistle (horn) control.
 - 410-4.1.11 [RFP] Generator alarms.
 - 410-4.1.12 [RFP] EO-IR controls.
- 410-4.2 [RFP] Ship service and emergency generator shutdowns are required to be located in the pilothouse in addition to other requirements.
- 410-4.3 [RFP] The following controls and displays shall be mounted so that they are grouped based on function and can be easily seen and operated from the helmsman's normal position with the helmsman facing forward:
- 410-4.3.1 [RFP] SCCS display and controls.
 - 410-4.3.2 [RFP] MCMS display and controls.
 - 410-4.3.3 [RFP] RADAR display and controls.
 - 410-4.3.4 [RFP] Depth sounder display and controls.
 - 410-4.3.5 [RFP] Speed Log display and controls.
 - 410-4.3.6 [RFP] Wind speed and direction display and controls.

- 410-4.3.7 [RFP] Communication Transceivers (or Transceiver Remote Control Heads).
 - 410-4.3.7.1 [RFP] Tactical VHF Transceivers, COR Section 440-7.
 - 410-4.3.7.2 [RFP] Marine Band DSC VHF Transceiver, COR Section 440-8.
- 410-4.3.8 [RFP] Announcing system.
- 410-4.3.9 [RFP] Window wiper and washer controls.
- 410-4.3.10 [RFP] ECINS.
- 410-4.3.11 [A010] Reserved.
- 410-4.3.12 [RFP] STEDS.
- 410-4.4 [RFP] Alarm panels, exterior lighting controls, and navigation light controls shall be convenient to the control station.
- 410-4.5 [RFP] An overhead console may be used for secondary controls and gauges such as pressure and temperature, and search light control. An overhead console shall not be used for primary engine controls, tachometers, depth sounder, or compass displays. If used, an overhead console shall not impair the vision of the helmsman or interfere with headroom. In no instance shall cables hang from the overhead so that they are allowed to sway with the motion of the FRC-B.
- 410-4.6 [RFP] Gauges, indicators, and displays shall be provided with adjustable intensity backlighting. The range of adjustment shall be from zero to full intensity.
- 410-4.7 [RFP] Lighted gauges, alarm indicators, and displays shall be arranged so that they do not reflect on the pilothouse windows during night operations.
- 410-4.8 [RFP] Consoles shall be fitted with access covers to allow maintenance and repair of equipment. These covers shall be hinged and shall be able to be opened and removed without the use of tools.
 - 410-4.8.1 [RFP] Lighting and electrical service outlets shall be provided inside each console to facilitate maintenance.

410-5 [RFP] Shipboard Command and Control System (SCCS)

- 410-5.1.1 [RFP] GFI SCCS software shall run on CFE hardware specified in COR Section 425-2.
- 410-5.1.2 [RFP] In addition to those described in COR Section 425-2, SCCS provides the following C2 functions:
 - 410-5.1.2.1 [RFP] Recording and playback capability for data, video (analog and digital), sensor information, alerts, and audio, without adversely impacting C2 operations or ongoing recording. Recording capabilities shall allow for 24 hours of recorded information with a minimum continuous block of 2 hours.
 - 410-5.1.2.1.1 [RFP] The ability to control and view playback of buffered video data is available at any C2 workstations.
 - 410-5.1.2.1.2 [RFP] Alert notification when there is a problem with data recording which will impact C2.
 - 410-5.1.2.1.3 [RFP] Tactical video shall be distributed at the SECRET level.

- 410-5.1.2.1.4 [RFP] The capability of recording and playback of voice at the Secret Level.
- 410-5.1.2.1.5 [RFP] The capability of data, tactical video, and voice storage capability at the Secret Level and at the SBU Level.
- 410-5.1.2.1.6 [RFP] Video recording shall allow for 2 simultaneous recordings which are selectable/patched from any source.
- 410-5.1.2.2 [RFP] Archival and retrieval capability of all recorded information, in its native format, without adversely impacting C2 operations.
 - 410-5.1.2.2.1 [RFP] The operator has the ability to specify those portions of the recorded information that are to be permanently archived to a removable media.
 - 410-5.1.2.2.2 [RFP] The system has the capability to identify the archived data to be restored.
 - 410-5.1.2.2.3 [RFP] The system has the capability of archiving tactical video and voice to removable media at the Secret Level and the SBU Level.
- 410-5.1.2.3 [RFP] Post event regeneration and analysis support.
- 410-5.1.2.4 [RFP] Recording and playback ownship location and selected track information.
- 410-5.1.2.5 [RFP] Electronic watch stander log capability.
- 410-5.1.2.6 [RFP] The ability to control recording from the workstation.
- 410-5.1.2.7 [RFP] Digital image viewing capability.
- 410-5.1.2.8 [RFP] Display of operator-selected tactical data on operator-selected displays.
- 410-5.1.2.9 [RFP] Display operator selected overlays for radar video on operator-selected geographic displays, as required in COR Section 425-1.2.
- 410-5.1.2.10 [RFP] The ability to convert navigational sensor, and ownship data from GPS into a form operationally suitable for use by mission planning, including mission support decision aids and by weapon systems.
- 410-5.1.2.11 [RFP] Display status of ownship and embarked assets.
- 410-5.1.2.12 [RFP] Full Level 2 ARPA functionality for the control of Surface Search Radars.

410-6 [RFP] Sensitive But Unclassified Tactical Information Exchange And Display System (STEDS)

- 410-6.1 [A013] [VEGA](#) is the software application component of STEDS that will be provided as GFI. The Coast Guard will install and integrate the VEGA software on the Contractor furnished hardware required in COR Section 410-6.2. The [ECS \(V2\) VEGA Block Diagram](#) is provided as guidance to show the current configuration in use by the Coast Guard.
- 410-6.2 [RFP] Hardware Requirements:
 - 410-6.2.1 [A010] Single Microsoft Windows XP® Professional, SP2 capable workstation
 - 410-6.2.1.1 [RFP] Minimum of 2.8 GHz Processors

- 410-6.2.1.2 [A010] Minimum of 1 GB RAM
- 410-6.2.1.3 [A010] Graphics capability meeting the following minimum requirements:
 - 410-6.2.1.3.1 [RFP] Resolution: 1280x1024x75
 - 410-6.2.1.3.2 [RFP] Graphics Memory: 512 MB
- 410-6.2.1.4 [A010] Minimum of 800 MHz Bus Speed
- 410-6.2.1.5 [A010] Gigabit Ethernet Network Interface Card
- 410-6.2.1.6 [A010] DVD Multi Drive
- 410-6.2.2 [RFP] 19" monitor display
- 410-6.2.3 [A010] Keyboard and three-button trackball inputs
- 410-6.2.4 [A010] Serial Port Server to integrate required interfaces (COR Section 410-6.3) meeting the following minimum requirements: (For information Only: Equipment meeting this requirement in use on Coast Guard platforms is the Control DeviceMaster RTS, part number 99448-0.)
 - 410-6.2.4.1 [A010] For information Only: Equipment meeting this requirement in use on Coast Guard platforms is the Control DeviceMaster RTS, part number 99448-0.
 - 410-6.2.4.2 [A010] Eight distinct serial ports.
 - 410-6.2.4.3 [A010] Serial ports software configurable to RS232/RS422/TD485.
 - 410-6.2.4.4 [A010] Device configurable via HTTP.
 - 410-6.2.4.5 [A010] Output data via User Datagram Protocol (UDP) and TCP/IP over Local Area Network (LAN) connection.
 - 410-6.2.4.6 [A010] Surge protection on all ports.
 - 410-6.2.4.7 [A010] 230 kbps throughput on all ports.
 - 410-6.2.4.8 [A010] Light indicators for Ethernet and serial activity.
 - 410-6.2.4.9 [A010] Device Drivers compatible with Windows XP Professional SP2.
- 410-6.3 [RFP] Required Interfaces (NMEA 0183, version 2.1 or later):
 - 410-6.3.1 [RFP] AIS (COR Section 455-2).
 - 410-6.3.2 [RFP] DGPS (COR Section 423-3.1.2).
 - 410-6.3.3 [RFP] Depth Sounder (COR Section 437-9).
 - 410-6.3.4 [RFP] Gyrocompass (COR Section 437-2.1).
 - 410-6.3.5 [A010] Speed Log (COR Section 437-3).
 - 410-6.3.6 [A010] Fluxgate Compass (COR Section 437-6).

SECTION 412. [RFP] DATA PROCESSING GROUP**412-1 [RFP] Scope**

- 412-1.1 [RFP] This section sets forth the general requirements for the FRC-B's Local Area Network (LAN) cabling systems and provides guidelines for installation. This section also addresses computer outlets and their locations.

412-2 [RFP] General Requirements

- 412-2.1 [RFP] The contractor shall design and install a fiber optic LAN cable systems in accordance with Commercial Standards and Publications [TIA/EIA TSB 67](#) standard and the following criteria:
- 412-2.2 [RFP] The shipboard LAN cabling system shall be provided with the following connections/components:
- 412-2.2.1 [RFP] All fiber optic cable shall be a minimum of four-strand commercial low smoke, zero halogen, 900 micron tight buffer (jacket), fiber optic cable.
 - 412-2.2.2 [A009] All fiber optic cable connectors shall be ceramic SC connectors.
 - 412-2.2.3 [A009] All strands of all fiber optic cables shall be terminated with ceramic SC type connectors.
 - 412-2.2.4 [RFP] All fiber optic cable runs shall terminate in patch panels at the central distribution points for each LAN.
 - 412-2.2.5 [RFP] A one meter fiber optic cable loop shall be included at each termination point, or a two meter loop at one end or the other.
 - 412-2.2.6 [RFP] The network server shall be connected to a patch panel located at a central computer location/central distribution point.
 - 412-2.2.7 [RFP] The hub will function as a collapsed backbone and distribute the signal through a patch panel to the computer outlets.
 - 412-2.2.8 [A010] Shore Tie. The shore tie junction box shall have at least 4 fiber optic connections (2 pair) that lead to the patch panel and support line rates of 100 Mbps or 100/1000 Mbps. A minimum of 2 pair of copper conductors shall also be run directly from the telephone shore tie receptacle (COR Section 432-2.4) to the unclassified LAN central patch panel terminating in a RJ45 Jack with a T568A wire pin out with wires connecting to pins 1, 2, 4, 5 (RG-48C).
 - 412-2.2.9 [RFP] Outlets.
 - 412-2.2.9.1 [RFP] Fiber optic cable shall be installed and run from the patch panel to shipboard-type surface-mounted fiber optic outlet boxes that have at least four active ceramic ST jacks per outlet.
 - 412-2.2.10 [RFP] All racks shall have a cable management system. Vertical wire managers shall be mounted down the side of the racks.
 - 412-2.2.11 [RFP] Cable support hardware of sufficient size/strength shall be installed to support the installed LAN Cable system.
 - 412-2.2.12 [RFP] Sufficient slack shall be provided to allow the termination to be modified, including cross connects, as specified.

- 412-2.2.13 [RFP] All cables, cable pathways and connecting hardware shall be labeled to comply with the labeling system in accordance with COR [Section 305](#). Fiber optic cables will be marked with orange innerduct marking, labeled "Fiber Optic Cable", with a clear indication of which direction the cable was tested at all exposed locations.
- 412-2.2.14 [RFP] All cables entering or leaving the central distribution point shall be secured to contractor supplied cable pathways.
- 412-2.3 [RFP] Acceptance Testing
- 412-2.3.1 [RFP] The cable installation of each cable shall be tested and certified in accordance with [ANSI/TIA/EIA526-14](#), method B, one reference jumper at both 850nm and 1300nm. The cable shall be tested in one direction (the direction of Signal travel).
- 412-2.4 [RFP] Fiber optic cable shall be tested using an Optical Time Domain Reflectometer (OTDR) or a transmitter/receiver type fiber tester. Each fiber optic strand shall be tested at 850nm and 1300nm and shall use the pass/fail criteria established in ANSI/TIA/EIA526-14. A certification report shall be provided within 14 days of the test that includes Optic Loss, Cable Length, and Propagation Delay for each strand tested. ([CDRL 412-001](#))
- 412-2.5 [RFP] Network Functionality
- 412-2.5.1 [RFP] All networks shall support IPv6 in accordance with RFC 2460.
- 412-2.5.2 [RFP] All networks shall maintain time synchronization with the DGPS as the source for the official time.
- 412-2.5.3 [RFP] The system shall be compatible with the existing Coast Guard RIPv2 routing structure.
- 412-2.5.4 [RFP] All networks supporting the transport of all classified data shall do so at the same level of security, up to a classification of Secret.
- 412-2.5.5 [RFP] All networks supporting the transport of all unclassified data shall do so at the same level of security, with the classification level of Sensitive But Unclassified (SBU).
- 412-3 [RFP] Sensitive But Unclassified (SBU) LAN**
- 412-3.1 [RFP] The SBU LAN shall be designed and installed to support a Microsoft Windows® based USCG Standard Workstation III imaged network.
- 412-3.2 [RFP] The SBU LAN shall have computers that function as unclassified servers and client workstations to process data (record message traffic, e-mail, logistics management, etc.) at the SBU level.
- 412-3.3 [RFP] The SBU LAN shall be capable of passing SBU data using Commercial FPS 140-2 AES 256 bit Type III encryption.
- 412-3.4 [RFP] The SBU LAN shall support printing at the SBU level.
- 412-3.5 [RFP] Drops
- 412-3.5.1 [RFP] Outlets for the SBU LAN shall be installed in the following:
- 412-3.5.1.1 [RFP] Pilothouse – one quad computer outlet.
- 412-3.5.1.2 [RFP] Ships office – two quad computer outlets.

- 412-3.5.1.3 [RFP] Officer's Berthing – one quad computer outlet each.
- 412-3.5.1.4 [RFP] CPO Berthing – one quad computer outlet each.
- 412-3.5.1.5 [RFP] Crew Berthing – two quad computer outlets each.
- 412-3.5.1.6 [RFP] Mess deck – two quad computer outlets.
- 412-3.5.1.7 [RFP] Engine room – one quad computer outlet.
- 412-3.6 [A009] A separate rack, as prescribed in COR Section 400-3, shall be provided and installed in the electronics space for USCG Standard Workstation III servers and SBU LAN equipment that will be installed post-delivery. The rack shall contain no less than 42U of space, accommodate 204kg (450 lbs) of network equipment, and provide a minimum of 3,000 watt supply of power.

412-4 [RFP] Classified LAN

- 412-4.1 [RFP] The Classified LAN shall be designed and installed to support a computing environment to support the approved USCG classified SECRET image.
- 412-4.2 [RFP] The Classified LAN shall have computers that function as classified servers and client workstations to process data (case files, e-mail, etc.) at the SECRET level.
- 412-4.3 [A009] The Classified LAN shall be capable of accessing the organic SIPRNET connectivity available at the Communications Area Master Station (CAMS).
 - 412-4.3.1 [RFP] The Classified LAN shall provide for the use of a SIPRNET IP Address Space for equipment directly connected to the classified LAN at the SECRET level.
 - 412-4.3.2 [RFP] The Classified LAN shall be capable of passing Classified SECRET data using Type I NSA approved IP packet based Network Encryption.
 - 412-4.3.3 [A010] The Government will install post-delivery any firewall or intrusion detection systems, hardware and software, required to connect to the SIPRNET.
- 412-4.4 [RFP] Certification and Accreditation. The C4ISR infrastructure shall comply with the following:
 - 412-4.4.1 [RFP] [DoDI 8510.bb](#), Department of Defense Information Assurance Certification and Accreditation Process (DIACAP), for classified computing systems and networks communicating over the SIPRNET.
 - 412-4.4.2 [RFP] [DoD Directive 8500.1](#), Information Assurance, for classified computing systems and networks communicating over the SIPRNET.
 - 412-4.4.3 [RFP] [DoDI Directive 8500.2](#), Information Assurance Implementation, for classified computing systems and networks communicating over the SIPRNET.
- 412-4.5 [RFP] The Classified LAN shall be capable of transmitting data at the secret level to be printed.
- 412-4.6 [RFP] Drops
 - 412-4.6.1 [RFP] One quad outlet shall be provided for a workstation on the Classified LAN in the electronic equipment space.

412-4.6.2 [A003] Five Classified LAN workstations shall be located in the electronic equipment space. Four of the Classified LAN workstations shall be accessed outside the electronic equipment space through the use of Keyboard/Video/Mouse (KVM) switches in the electronic equipment space which allow input devices and displays outside the space to be connected to the classified workstation. One classified workstation shall be accessed from within the electronic equipment space and may use a KVM switch. KVM devices shall be Defense Information System Network Security Accreditation Working Group (DSAWG) approved. KVM switches and cabling shall be provided for access in the following spaces:

412-4.6.2.1 [RFP] CO's stateroom.

412-4.6.2.2 [RFP] XO's stateroom.

412-4.6.2.3 [RFP] Pilothouse Navigation Display (ECINS).

412-4.6.2.4 [RFP] Pilothouse Tactical Display (SCCS).

412-4.7 [A009] A separate rack, as prescribed in COR Section 400-3, shall be provided and installed in the electronics space for classified equipment that will be installed post-delivery. The rack shall contain no less than 42U of space, accommodate 204kg (450 lbs) of network equipment, and provide a minimum of 3,000 watt supply of power.

412-5 [RFP] C2/SCCS LAN

412-5.1 [RFP] The C2/SCCS LAN shall be used to support a Sun Microsystems Solaris® OS based network. It provides the following capabilities:

412-5.1.1 [A013] Transport data from the C2 System to the Tactical Digital Video Recording System.

412-5.1.2 [A013] Reserved.

412-5.1.3 [RFP] Transport data from the C2 System to the EO/IR Sensor.

412-5.1.4 [A010] Transport track and contact data from the C2 System to the Primary Surface Search Radar.

412-5.1.5 [A010] Transport data between the C2 System and the Classified LAN.

412-6 [A010] Connectivity

412-6.1 [A010] Ashore

412-6.1.1 [A010] The SBU LAN shall connect to the internet via the Coast Guard Data Network Plus (CGDN+) through the data connection on the telephone shore tie required in COR Section 432-2.4.

412-6.1.2 [A010] A serial HDSL modem shall be provided and connected to one pair of the data conductors for portside connection to the CGDN+ while in CG ports.

412-6.1.3 [A010] The Classified LAN shall be connected to SIPRNET through the Type 1 NSA approved KG-175D when connected ashore by the serial HDSL modem. The KG-175D shall be provided and installed by the Government post-delivery.

412-6.2 [A010] Underway

412-6.2.1 [A010] The SBU LAN shall be connected to the commercial satellite telephone system required in COR Section 440-16 to provide INMARSAT

dial-up ISDN service and Mobile Packet Data Service (MPDS) service while underway.

- 412-6.2.1.1 [A010] The minimum effective throughput of data shall comply with COR Section 440-16.
- 412-6.2.2 [A010] The Classified LAN shall be connected to SIPRNET through the Type 1 NSA approved KG-175D when connected underway by the INMARSAT service. The KG-175D shall be provided and installed by the Government post-delivery.
- 412-6.3 [A010] A separate rack, as prescribed in COR Section 400-3, shall be provided and installed in the electronics space for USCG WAN and underway connectivity equipment that will be installed post-delivery. The below deck equipment (BDE) for the F77+ terminal required in COR Section 440-16 shall also be installed in this rack. The rack shall contain no less than 42U of space, accommodate 204kg (450 lbs) of network equipment, and provide a minimum of 3,000 watt supply of power.

SECTION 413. [RFP] DIGITAL DATA SWITCHBOARDS**413-1 [RFP] General and Performance Requirements**

- 413-1.1 [RFP] Digital Data Switchboards shall be installed for control and signal distribution from electronic navigation sensors and systems. These switchboards shall contain signal buses, distribution switches (automatic and manual), buffer/amplifiers, signal expanders, circuit protection devices, action cutout and transfer switches, indicating devices, and other devices necessary for signal distribution. A digital data signal summary and system capacity calculations shall be prepared for the switchboards. ([CDRL 085-410](#)) This summary shall include the type of signal as well as the communications protocol.
- 413-1.2 [RFP] The IC panelboard shall meet the design, performance, construction, and application requirements of [46 CFR, Subchapter J](#) and [IEEE-STD-45, Section 37](#).
- 413-1.3 [RFP] Action cutout or automatic digital switches shall be installed as part of the Digital Data Switchboard systems to allow isolation of a casualty or malfunction, and to permit the system to remain operable.
- 413-1.4 [RFP] An automatic transfer switch shall be installed in the Digital Data Switchboard to permit the selection of a signal source whenever a receiver device can function on more than one signal source.

SECTION 421. [RFP] NON-ELECTRICAL AND NON-ELECTRONIC NAVIGATIONAL AIDS**421-1 [RFP] Scope**

421-1.1 [RFP] This Section sets forth the design, installation and stowage requirements for all navigational aids which are independent of electrical and electronic systems.

421-2 [RFP] Magnetic Compass

421-2.1 [RFP] A Magnetic Compass and binnacle shall be provided in accordance with [IMO Resolution A.382\(X\)](#).

421-2.2 [RFP] The compass shall be installed on centerline in the Bridge Console, forward of the primary helm station, and within easy view of the helmsman while underway.

421-2.3 [RFP] The compass shall be readable to less than 1° increments and shall be capable of transmitting current heading to other cutter's electronic systems, including ECINS and C2, using [NMEA 0183](#), version 2.1 and later, standards.

421-2.4 [RFP] The binnacle shall be made with seawater resistant fittings and shall include the following components:

421-2.4.1 [A009] Electric light (Blue, Rheostat Controlled) connected to emergency power source

421-2.4.2 [A009] Reserved

421-2.4.3 [RFP] Bar magnets

421-2.4.4 [RFP] Full size D spheres and flinder's bars

421-2.4.5 [RFP] Heeling magnet

421-2.4.6 [RFP] Name plate with serial number and approval number.

421-3 [RFP] Clinometers

421-3.1 [RFP] Heeling and trimming clinometers meeting standard [CID-A-A-59308](#) shall be provided and installed on the fore and aft axis and athwartships in the pilothouse.

421-4 [RFP] Day Shapes

421-4.1 [RFP] Day shapes shall be provided in accordance with [COMDTINST M16672.2D](#) "Navigation Rules, International - Inland" for each of the operating scenarios described in COR SECTION 422.

421-4.2 [RFP] Hoisting arrangements shall be provided for displaying the day shapes. (see COR [Section 170](#))

421-4.3 [RFP] Storage space shall be provided for the day shapes which is either inside the pilothouse, or adjacent to the hoisting location.

SECTION 422. [RFP] NAVIGATION, SIGNAL AND SEARCH LIGHTS**422-1 [RFP] Scope**

- 422-1.1 [RFP] This Section sets forth the requirements for the FRC-B's navigation light panel, navigation lights, and signal lights, search light, and law enforcement light.
- 422-1.2 [RFP] The location and/or installation of each light shall be such that routine maintenance can be safely and easily performed by shipboard personnel. This shall be accomplished by arranging equipment such that special tools, temporary staging, ladders, and/or rigging is not required. A permanent or removable ladder shall be installed for access to the pilothouse top.
- 422-1.3 [RFP] All lights required by this Section shall be controlled from the pilothouse.

422-2 [RFP] Navigation Lights

- 422-2.1 [RFP] Navigation lights shall be provided to also meet the requirements of [COMDTINST M16672.2D](#) "Navigation Rules, International-Inland".
- 422-2.2 [RFP] At a minimum, navigation lights shall be provided and installed to meet the following international and inland operating scenarios as defined by [COMDTINST M16672.2D](#).
- 422-2.2.1 [RFP] Vessel at Anchor
- 422-2.2.2 [RFP] Vessel Underway
- 422-2.2.3 [RFP] Towing Astern, Length of Tow Exceeds 200m
- 422-2.2.4 [RFP] Towing Astern, Length of Tow 200m or Less
- 422-2.2.5 [RFP] Towing Alongside
- 422-2.2.6 [RFP] Vessel Not Under Command (NUC)
- 422-2.2.7 [RFP] Vessel Restricted in Ability to Maneuver (RAM)
- 422-2.3 [RFP] Each navigation light fixture shall meet the requirements of and be installed in accordance with [COMDTINST M16672.2D](#), [UL 1104](#) and [46 CFR, Subchapter J](#). Single lens light fixtures with single receptacles and plugs may be used in lieu of double lens light fixtures with separate receptacles and plugs.
- 422-2.4 [RFP] Navigation lights shall be shielded to prevent illumination of the decks, deckhouse and deck equipment.
- 422-2.5 [RFP] Navigation Lights shall be part of the emergency power system as defined by COR [Section 320](#).
- 422-2.6 [RFP] A navigation light panel shall be installed in the pilothouse in accordance with [46 CFR, Subchapter J](#). The panel shall be the primary control for all navigation lights (both supervised and unsupervised), and shall be of commercial marine type. This panel shall be selected based on the number of fixtures to be controlled, plus two spare circuits (one supervised and one unsupervised).

422-3 [RFP] Signal Lights

- 422-3.1 [A009] An efficient daylight signal light which shall not be solely dependent upon the ship's main source of electrical power and is in compliance with [46 CFR 161](#) shall be provided for communicating visual information and signals to other ships.

- 422-3.2 [RFP] A maneuvering light, in accordance with [COMDTINST M16672.2D](#), Rule 34, shall be installed to operate with the ship's whistle; see COR Section 443-1.

422-4 [RFP] Searchlight

- 422-4.1 [RFP] The FRC-B shall have three permanently installed searchlights, one forward, one port, and one starboard. The searchlights shall be located above the pilothouse.
- 422-4.2 [RFP] The searchlights shall be designed for marine applications, shall meet [IEEE-STD-45](#) clause 20.9, and shall be rated for at least 20,000,000 candela. The searchlight shall be controlled remotely from inside the pilothouse. The control functions (at a minimum) are to be: on/off, directional, beam sweep speed and beam focus control. The range of the light's angle of inclination and training along with its selected location shall be such that the light can be brought to bear on any objects 4m (13.1 ft) or more horizontally from the FRC-B's deck edge from a point directly athwartships of the pilothouse front, and as much area aft as practicable.
- 422-4.3 [RFP] The searchlights shall be operated from remote control levers mounted on the pilothouse console and rotate through a full 360° arc. If the port and starboard searchlights are mounted on bridgewings, they may be manually operated locally.
- 422-4.4 [RFP] Infrared (IR) filters shall be provided for each searchlight.

422-5 [RFP] Law Enforcement Light

- 422-5.1 [RFP] A blue strobe Law Enforcement Light shall be installed on the mast, located to provide maximum visibility to other vessels.

SECTION 423. [RFP] ELECTRONIC NAVIGATION SYSTEMS, RADIO**423-1 [RFP] Scope**

- 423-1.1 [RFP] This Section sets forth the general requirements for the FRC-B's electronic navigation and acoustical systems. These systems include Differential Global Positioning System (DGPS), Loran-C, Radio Direction Finder (RDF), and the Depth Sounder.

423-2 [RFP] Performance and General Requirements

- 423-2.1 [RFP] Cabling Requirements. The wiring for each system shall normally be run in separate cables terminating in separate terminal boxes. Cabling for navigation and acoustical systems shall be given maximum protection in the cableways. Cable for dual system installations shall be routed with each system's cable and located in separate cableways to afford maximum protection as stated in SOLAS V (1997).
- 423-2.2 [RFP] Emergency power shall be provided for the equipment in this Section in accordance with COR Section 320.
- 423-2.3 [RFP] The sensor suite shall enable/disable transmitters in response to an Emission Control (EMCON) order.

423-3 [RFP] Major Components and Subsystems

- 423-3.1 [RFP] The following equipment and peripherals shall be provided and installed:
- 423-3.1.1 [RFP] A single synthesized Radio Direction Finder (RDF).
- 423-3.1.1.1 [RFP] The RDF sensor shall have a detection sensitivity, defined as indicating a signal bearing with an RMS jitter of 0.1 radian or better from a signal duration of 200 milliseconds, capable of reception covering the following ranges:
- 423-3.1.1.1.1 [RFP] 200-535 KHz
 - 423-3.1.1.1.2 [RFP] 2-30 MHz
 - 423-3.1.1.1.3 [RFP] 121.5 MHz
 - 423-3.1.1.1.4 [RFP] 147-174 MHz
 - 423-3.1.1.1.5 [RFP] 406 MHz (including decoding of data burst)
 - 423-3.1.1.1.6 [RFP] VHF Marine and Aviation bands 110-175 MHz
- 423-3.1.1.2 [RFP] The RDF shall scan the 147-174 MHz spectrum by frequency. The bearing readout shall have an accuracy of +/-5 degrees.
- 423-3.1.1.3 [RFP] The RDF shall have the capability to output bearing and frequency data via NMEA 0183, version 2.1 or higher standards.
- 423-3.1.1.3.1 [RFP] The RDF shall interface with the C2 system specified in COR section 410-2.2.1.
- 423-3.1.1.4 [RFP] The RDF sensor shall be capable of providing the following coverage:
- 423-3.1.1.4.1 [RFP] 360° azimuth surveillance coverage.
 - 423-3.1.1.4.2 [RFP] Elevation surveillance coverage from 0° to 30°.

- 423-3.1.1.4.3 [RFP] The RDF antenna shall be mounted at the top of the mast for optimal performance.
- 423-3.1.1.5 [RFP] The RDF system shall be capable of carrying out RDF functions (detect and obtain lines of bearings) on user defined frequencies.
- 423-3.1.2 [RFP] Two independent Differential Global Positioning System (DGPS) Receivers with antennas shall be provided capable of receiving and processing Differential GPS signals.
- 423-3.1.2.1 [RFP] Each DGPS display shall be a monochrome LCD, no larger than 115mm (4.5 in), diagonal. The accuracy of position data in DGPS mode shall be 1m (3.28 ft) or better with selective availability turned off.
- 423-3.1.2.2 [RFP] A NMEA Amplifier/Expander, shall be installed in accordance with COR Section 413-1. DGPS shall interface with both the primary and secondary surface search radars, COR Section 451-1, both the primary and backup ECINS, COR Section 425-1.1.2, and the DSC VHF-FM transceiver, COR Section 440-8.
- 423-3.1.2.3 [RFP] NMEA Buffer/Amplifier/Expanders and auto-switches shall be installed as necessary to provide primary and secondary DGPS NMEA data to all required equipment without interruption, degradation or corruption of the data.
- 423-3.1.2.4 [RFP] The DGPS systems shall interface with the C2 system specified in COR Section 410-2.2.1.
- 423-3.1.2.5 [RFP] The DGPS systems shall provide current position and time data.
- 423-3.1.3 [RFP] Loran-C System, including receiver, antenna coupler, and antenna.
- 423-3.1.3.1 [RFP] The Loran-C system shall interface with the C2 system specified in COR Section 410-2.2.1. This system shall meet the [IEC 61075](#) requirements for ships.
- 423-3.2 [RFP] All systems shall have readouts in the pilothouse, positioned in or in close proximity to the FRC-B control console.

SECTION 425. [RFP] ELECTRONIC CHART INTEGRATED NAVIGATION SYSTEM (ECINS)**425-1 [RFP] General and Performance Requirements**

425-1.1 [A013] The USCG Command and Control Engineering Center (C2CEN) developed an Electronic Chart Integrated Navigation System (ECINS) for Coast Guard 110' Island Class Patrol Boats called the Shipboard Command and Control System – 110 (SCCS-110). [SCCS-110](#) is the basis for the C2 system for the FRC-B which will be provided as GFI. The Coast Guard will install and integrate the SCCS software on the contractor furnished equipment required in COR Section 425-2. The core of the SCCS navigation system is the Command Data And Control Integrated Navigation Segment (COMDAC-INS) which is designed to run on the Common Operating Environment (COE) developed by the Defense Information Systems Agency (DISA). It is compliant with [RTCM Paper 100-2002/SC109-STD](#), RTCM Recommended Standards for Electronic Chart Systems (ECS). The system includes two Operator positions on the bridge and shall interface with:

425-1.1.1 [RFP] The Surface Search X-Band Radar, (COR Section 451-1.7)

425-1.1.2 [RFP] The DGPS receivers, (COR Section 423-3.1.2)

425-1.1.3 [RFP] The Gyrocompass, (COR Section 437-2)

425-1.1.4 [RFP] The Speed Log, (COR Section 437-3)

425-1.1.5 [RFP] The Depth Sounder, (COR Section 437-9.4)

425-1.1.6 [RFP] The LORAN-C, (COR Section 423-3.1.3)

425-1.1.7 [RFP] The Autopilot, (COR [Section 561-5](#))

425-1.1.8 [RFP] The AIS, (COR Section 455-2.1)

425-1.1.9 [RFP] The Wind Speed Indicator System (COR Section 437-5)

425-1.1.10 [RFP] The PC Based Radar Processor (COR Section 451-3)

425-1.1.11 [RFP] STEDS (COR Section 410-6).

425-1.1.12 [RFP] The RDF (COR Section 423-3.1.1.3.1)

425-1.2 [RFP] The system shall provide the ability to overlay radar onto displayed geographic (chart) information.

425-2 [RFP] Hardware Requirements

425-2.1 [RFP] SCCS utilizes Sun RISC processor hardware running the Sun Solaris® operating system version 8. The design introduced a common hardware and software architecture across all SCCS-110, 210, 270 and 378 equipped vessels to simplify support and training.

425-2.2 [RFP] Hardware.

425-2.2.1 [RFP] Fast Ethernet Switch.

425-2.2.1.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # WS-C2950G-24-EI, manufactured by Cisco Systems, Inc.

Table 425-1

Parameter	Minimum Requirement
Performance	<p>13.6 Gbps switching fabric 8.8 Gbps maximum forwarding bandwidth 6.6 Mpps wire-speed forwarding rate 8-MB memory architecture shared by all ports Up to 16 MB SDRAM and 8 MB Flash memory Configurable up to 8000 MAC addresses Configurable maximum transmission unit (MTU) of up to 1530 bytes</p>
Management	<p>Bridge-MIB; Cisco-Bulk-File-MIB; Cisco 2900-MIB; Cisco-CDP-MIB; Cisco-Class-Based-QoS-MIB; Cisco Cluster-MIB; Cisco-Config-Copy-MIB; Cisco-Config-Man-MIB; Cisco-Envmon-MIB; Cisco-Flash-MIB; Cisco-FTP-Client-MIB; Cisco-Image-MIB; Cisco-IPMRoute-MIB; Cisco-MAC-Notification-MIB; Cisco-Memory-Pool-MIB; Cisco-PagP-MIN; Cisco-Ping-MIB; Cisco-Process-MIB; Cisco-Products-MIB; Cisco-RTTMon-MIB; Cisco-SMI; Cisco-Stackmaker-MIB; Cisco-STP-Extension-MIB; Cisco-Syslog-MIB; Cisco-TC; Cisco-TCP-MIB; Cisco-VLAN-Membership-MIB; Cisco-VTP-MIB; Entity-MIB; IANAifType-MIB; IF-MIB (RFC 1573), OLD-Cisco-Chassis-MIB; OLD-Cisco-CPU-MIB; OLD-Cisco-Interfaces-MIB; OLD-Cisco-IP-MIB; OLD-Cisco-Memory-MIB; OLD-Cisco-System-MIB; OLD-Cisco-TCP-MIB; OLD-Cisco-TS-MIB; RFC1213-MIB (MIB-II); RFC1398-MIB (Ethernet-MIB); Rmon-MIB (RFC 1757); RS-232-MIB; SNMPv2-MIB; SNMPv2-SMI; SNMPv2-TC; TCP-MIB; UDP-MIB</p>
Standards	<p>IEEE 802.1x support; IEEE 802.1w; IEEE 802.1s; IEEE 802.3x full duplex on 10Base-T, 100Base-TX and 1000Base-T ports; IEEE 802.1D Spanning-Tree Protocol; IEEE 802.1p class-of-service (CoS) prioritization; IEEE 802.1Q VLAN; IEEE 802.3 10Base-T specification; IEEE 802.3u 100Base-TX specification; IEEE 802.3ab 1000Base-T specification; IEEE 802.3ad; IEEE 802.3z 1000Base-X specification; 1000Base-X (GBIC); 1000Base-T(BGIC); 1000Base-SX; 1000Base-LX/LH; 1000Base-ZX; 1000Base-CWDM BGIC 1470nm; 1000Base-CWDM BGIC 1490nm; 1000Base-CWDM BGIC 1510nm; 1000Base-CWDM BGIC 1530nm; 1000Base-CWDM BGIC 1550nm; 1000Base-CWDM BGIC 1570nm; 1000Base-CWDM BGIC 1590nm; 1000Base-CWDM BGIC 1610nm; RMON I and II standards; SNMPv1, SNMPv2c, SNMPv3 (planned future support for v3)</p>
Y2K	Y2K Compliant
Connectors and Cabling 10Base-T ports 100Base-TX ports 1000Base-T ports 100Base-FX ports 1000Base-T, -SX, -LX/LH, -ZX GBIC-based ports Cisco GigaStack GBIC ports Management console port	<p>RJ-45 connectors, two-pair Cat 3, 4, or 5 UTP cabling RJ-45 connectors, two-pair Cat 5 UTP cabling RJ-45 connectors, two-pair Cat 5 UTP cabling MT-RJ connectors, 50/125 or 62.5/125 micron multimode fiber-optic cabling SC fiber connectors, single-mode or multimode fiber</p> <p>Copper-based Cisco GigaStack cabling 8-pin RJ-45 connector, RJ-45-to-RJ-45 rollover cable with RJ-45-DB-9 adapter for PC connections; for terminal connections, use RJ-45-to-DB25 female data-terminal-equipment (DTE) adapter</p>

Parameter	Minimum Requirement
Indicators Per-port status LEDs System status LEDs	Link integrity, disabled, activity, speed, and full-duplex indications System, RPS, and bandwidth utilization indications
Environmental Ranges	Operating temperature: 32° F to 113° F (0° C to 45° C) Storage temperature: -13° F to 158° F (-25° C to 70° C) Operating humidity: 10 to 85% non-condensing Operating altitude: Up to 10,000 ft. (3,000 m.) Storage altitude: Up to 15,000 ft (4,570 m.)
Predicted MTBF	468,884 hours
Agency Approvals Safety EM emissions certifications	UL 1950/CSA 22.2 No. 950 IEC 950/EN 60950 AS/NZS 3260, TS001 CE Marking EN 55022: 1998 Class A (CISPR22 Class A) EN 55024: 1998 (CISPR24) VCCI Class A AS/NZS 3548 Class A CE Marking CNS 13438 BSMI Class A MIC

425-2.2.2 [RFP] Displays.

- 425-2.2.2.1 [A010] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # EXP1910-P, manufactured by Nortech Engineering.

Table 425-2

Parameter	Minimum Requirement
LCD	18.1" Active matrix TFT
Dot Pitch	.28mm dot pitch
Viewable	18.1"
Resolution	1280 x 1024 (75Hz max.)
Colors	16.7 million
View angle	140 Degree viewing cone
Brightness	200 nits
Contrast Ratio	250:1 typical
Backlight Life	25,000 hours
Display Life	50,000 hours
Video Input	HD15
Operating Temperature	41° F to 113° F (5° C to 45° C)
Storage Temperature	14° F to 140° F (-10° C to 60° C)

Parameter	Minimum Requirement
Humidity	30 to 80% non-condensing
Safety Approvals	UL/CUL

425-2.2.2.2 [RFP] SCCS displays shall be flat panel displays with a minimum size of 19". There shall be a display at each helm position and at the navigation station.

425-2.2.2.3 [RFP] The displays shall be easily viewable from the ship control system in accordance with display location requirements in [ASTM F1166](#).

425-2.2.3 [RFP] Network Attached Storage (NAS) RAID.

425-2.2.3.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # SNAZ-E6-SCSI, manufactured by Raidtec Corporation.

Table 425-3

Specification	Parameter
General Host Interface SCSI Interface SAN Interface Flash Memory Cache Memory UPS Support	1 x Gigabit Ethernet (10/100/1000); 1 x 10/100 Gigabit Dual Ultra 160 SCSI for tape-backup devices or storage capacity expansion 1 or 2 Gb Fibre Channel interface for storage capacity expansion (option) 32MB 256MB to 1GB APC UPS Serial Interface
Software & Protocols Operating System TCP/IP SMB/CIFS	FlashLinux w/ XFS journaling filesystem Yes Yes
Software & Protocols (cont.) UDP, DHCP, DNS, WINS, NTP NFS ACLs & Quota Management SMTP SNMP Tape-Backup Software Web Download & Upgrade	Yes Version 2 and 3 compliant Set quotas and ACLs per file or per directory. Browse user and group lists on Primary Domain Controller. Yes Yes Yes Yes
RAID RAID Levels No of RAID Sets Supported Max No of Disk Drives Storage Capacity Hot Spare Disk Automatic Rebuild Large File Support	0, 1, 10, 5 Up to 6 6 480GB, 720GB, or 960GB. Additional expansion possible using SCSI or Fibre Channel interfaces. Yes Yes Yes

Specification	Parameter
Client OS Supported	Windows 98/ME/NT/2000/XP, MAC OS X, UNIX, Open VMS, Linux
Administration Administration Alerts LED Notification	Web browser or Serial Console SNMP, SMTP Yes
Enclosure Rackmount Passive Backplane Drive Shuttles Dual Redundant Power Supply Dual Power Entry Slide Rails	19" Rack 2U Yes 6 (lockable) Yes (optional) Yes (optional) Yes (optional)
Environmental Operating Environment Non-Operating Environment	41° F to 104° F (5° F to 40° C) 10% - 80% relative humidity, non-condensing -4° F to 140° F (-20° C to 60° C) 10% - 80% relative humidity, non-condensing
Agency Emissions & Safety Quality	FCC, UL, UL Canada, CE Conformity ISO 9001

425-2.2.4 [RFP] Terminal Server.

425-2.2.4.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # TS-16, manufactured by Digi International Inc.

Table 425-4

Specification	Parameter
Features	Connects to 10/100 Mbps Ethernet LAN DHCP, RARP and ARP Ping for easy IP address assignment HTTP for easy configuration with a browser Telnet, Reverse telnet, Rlogin, and auto-connect Up to nine Telnet or Rlogin sessions per port TCP and UDP Socket support Password access PPP (PAP & CHAP) Line Printer Daemon (LPD) SNMP (read and write) DPA-Remote for easy monitoring Easily upgrade firmware via TFTP Save/Restore configuration to host Surge protection all ports 230 Kbps throughput on all ports Full modem and hardware flow control LEDs for serial and Ethernet activity RADIUS SSH v2 Port Buffering up to 64 Kbps per port

Specification	Parameter
Operating Systems	AIX; HP-UX; Linux; MS Windows XP; MS Windows 2000; MS Windows NT; NCR UNIX MP-RAS; SCO OpenServer; SCO UnixWare; Solaris (Intel); Solaris (SPARC)
Environmental Ambient Temperature Relative Humidity	50° F to 131° F (10° C to 55° C) 5% to 90% (non-condensing)
Regulatory Approvals	FCC Part 15, Class B EN55022, Class B AS3548 EN55024 EN 60950 UL 1950 CSA 22.2 No. 950 VCCI

425-2.2.5 [RFP] Server/Workstation.

- 425-2.2.5.1 [A010] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # Sun Fire V210 and model # Sun Fire V215, manufactured by Sun Microsystems, Inc.

Table 425-5

Specification	Parameter
Maximum DC output	320 W
Processor Options Processor Architecture Cache	Two 1.5 GHz UltraSPARC® IIIi 64 bit, 4-way Superscalar SPARC® V9 64 KB data, 32 KB instruction and 1 MB integrated L2
Main Memory	4 DIMM slots per processor, registered DDR-1 SDRAM (PC2100) 128 bit + ECC databus System Configuration 16 GB
Standard/Integrated Interfaces Network Network Management Serial Management Serial SCSI USB Expansion Bus System Configuration Reader and Card Security	Four 10/100/1000 BaseT Ethernet One 10 BaseT Ethernet One TIA/EIA-232-F (RJ45) Port One TIA/EIA-232-F asynchronous (DB9) Port One Ultra160SCSI multimode (SE/LVD) Two OHCI-1.0 Compliant Interfaces, supporting dual speeds of 12 and 1.5 Mbts/sec each One 64 bit 33/66 MHz 3.3 V full-length slot (PCI 2.2 compliant) Front accessible for transfer of system configuration information, including host ID Optional Hardware Cryptographic Module, offering security protocol acceleration via a daughter card
Internal Disk	Up to two hot-swap Ultra160SCSI 36 GB / 73 GB Disks
Operating Environment	Solaris™ 10 Solaris™ 9 (Hardware Release 04/03 or later)

Specification	Parameter
Environment Operating Temperature Operating Humidity Non-operating Temperature Non-operating Humidity	41° F to 104° F (5° C to 40° C) 10 to 90% relative humidity, non-condensing, 27° C max wet bulb -40° F to 149° F (-40° C to 65° C) Up to 93% relative humidity, non-condensing, 38° C max wet bulb
Regulations Safety RFI/EMI Immunity Certifications Safety EMC	IEC60950, UL/CSA60950, EN60950 FCC Class A, Part 15 47 CFR, EN55022, CISPR 22 EN55024 cULus Mark, TUV GS Mark, CE Mark CE Mark (93/68/EEC), FCC authorized Class A, VCCI, BSMI, CTICK
Power Supplies	Redundant

425-2.2.6 [RFP] Video Distribution Amplifier.

425-2.2.6.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # IN3262D, manufactured by Inline, Inc.

Table 425-6

Specification	Parameter
General Bandwidth Internal Jumpers	400 MHz @ -3dB (3) for RGB Input Termination: 75ohms/High
Features	400 MHz Bandwidth Two Buffered Outputs Capable of Driving Long Cables Compatible with VGA, SVGA, XGA Signals Passes Sense Pins to Local Monitor CRT/LCD/DMD/Plasma Display Friendly Output Sync Signals
Input Connector Signal Sync Horizontal Sync Range Vertical Sync Range	15-pin HD male 1.5 Vp-p max TTL compatible for H & V 15 to 130 KHz 30 to 120 Hz
Outputs Connectors Video Gain Sync	(2) 15-pin HD female 1.0 (unity) TTL compatible
Regulatory Compliance	UL 1950 CE: EN55022 (1987) CE: EN50081-1 (1991) CE: EN50082-1 (1992 and 1994) CE: EN60950-92 CAN/CSA-22.2 No. 950 3rd Ed. FCC class A

425-2.2.7 [RFP] Universal Serial Bus (USB) Devices.

425-2.2.7.1 [RFP] Four-port USB Extender.

425-2.2.7.1.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # IC241A, manufactured by Black Box Network Services.

Table 425-7

Specification	Parameter
Cable	Host USB: Type A/B 2m Link: Must be Category 5 UTP or better UTP cabling must have a straight-through conductor configuration with no crossover and terminated with 8-conductor RJ-45 connectors at both ends
Certifications	FCC Part 15, Class A CE USB-IF
Temperature Tolerance	39° F to 104° F (4° C to 40° C)
USB Speeds	1.5 Mbps and 12 Mbps (autosensing)
Connectors	LEX: (1) RJ-45 UTP, (1) USB Type B REX: (1) RJ-45 UTP, (4) USB Type A
Indicators (LEDs)	LEX: (1) Host, (1) Link, (1) Power REX: (1) Link, (1) Power, (4) USB Port

425-2.2.7.2 [RFP] Type-6 Backlit Keyboard.

425-2.2.7.2.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # 537-ABTCX-0054, manufactured by Cortron, Inc.

Table 425-8

Specifications	Parameter
Design Features	Sealed, spill proof/dust proof construction Liquid beverage immune Electronics, switch actuators, optical sensors and internal connectors protected from contamination All metal enclosure with welded seams Full-travel solid-state switches Extremely high MTBF
Design Features (cont.)	Durable long-life key legends (heat-fused into plastic for wear resistance) Durable exterior finish, impervious to many chemicals Ergonomic key sculptures enhances HMI (Human machine interface) N-Key Rollover improves high speed typing
Optional Electrical I/O Interfaces	IBM PS/2, AT; SUN; RS-232; RS-422; USB

Specifications	Parameter
Backlighting Features	Reliable LED light source – Green, Red, Amber LED colors Negative/Reverse Image key legends enhance readability and overall image Durable key legends Brightness control capability provides flexibility for different ambient conditions and personal preferences Optional remote brightness control via customer equipment Backlighting power isolated from keyboard power
Standard Conformity	ISO 9001, MIL-STD-45208A, MIL-HDBK-454, MIL-STD-1686B, IPC-610A
General Options	Available in standard colors: Navy Gray, Off-White and Black Snap down rear feet for ergonomic angle adjustment, bolt-on rubber feet, without feet for rack mounting Integral padded angled wrist rest Filtered vent for extreme altitude and humidity changes Conformal coating for redundant protection and long-term resistance to excessive rain, humidity, salt/fog and corrosion Separate or permanently attached cables Microsoft Windows/NT keys (IBM versions only) International Key Legend sets Keycap retaining clips for extreme shock environments Shock sensing capability to reduce key codes sent to host during shock event Custom by design: metal work, hinges, case work, customer supplied parts integration, enclosure colors, key codes, protocol, key legends, cables, connectors OEM kits for installation by the customer

425-2.2.7.2.2 [RFP] The system keyboards shall be IMO ECDIS type approved and shall have backlighting to allow it to be used during night operations. The keyboard backlighting intensity shall be able to be varied anywhere from zero to full intensity.

425-2.2.7.3 [RFP] Industrial Trackball.

425-2.2.7.3.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # B-USBID, manufactured by ITAC Systems Inc.

Table 425-9

Specifications	Parameter
Mechanical Specifications	
Body Material	ABS, grey
Ball Material	Cast Phenolic Resin
Ball Hardness	Rockwell H 85
Tracking Force	1.5 oz. maximum, 0.5 oz. Typical (15 g.)
Ball Load	25 lbs. maximum downward
Ball Speed	500 RPM maximum
Hand Pad	Injection-molded vinyl, grey

Specifications	Parameter
Functional Specifications Resolution Input Switches Interface Connector Pin Assignments Compatibility OS Certifications Switches Cable Power consumption	192 to 576 pulses per revolution of the ball Six (6) USB USB Type A Pin 1 = +5V, PC1 Pin 2 = – Data, PC3 Pin 3 = +Data, PC2 Pin 4 = Ground, PC1 HID 2.0 Microsoft Windows 98 Mechanically limited, break resistant 66" +/-0.5", double shielded, 100% coverage Idle: 11mA Max: 15mA
Environmental Specifications Operating Temperature Storage Temperature Humidity	32° F to 122° F (0° C to 50° C) -4° F to 140° F (-20° C to 60° C) 0 to 95% non-condensing

425-2.2.8 [RFP] Uninterruptible Power Supply (UPS).

- 425-2.2.8.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # UPS1-1.25K-1G-SRNDTI-F2, manufactured by Nova Power Solutions Inc.

Table 425-10

Specification	Parameter
Options Feature: Input Isolation Transformer Auto Sense, Wide Voltage Input	Model: UPS1-1.25K-1G-SRNDTI CT-04 B
Power Capabilities Nominal Current Input Current RMS Current Output Repetitive Peak	1250 VA 8.7 Amps 10.4 Amps 24.7 Amps
Power Capabilities (cont.) Backup Time (50%/100% Load)	Standard: 12/25 Single Aux. Battery: 20/50 Dual Aux. Battery: 34/85
Electrical Input Power Factor Corrected	IAW MIL-STD-1399 Sec. 300
Electrical Output Crest Factor Ratio (Non-linear Load and < 5% THD)	@ 50% Load Up to 4.8:1 @ 75% Load Up to 3.2:1 @ 100% Load Up to 2.4:1

Specification	Parameter
Total Harmonic Distortion (THD) Dynamic Response Overload Efficiency (UPS) UPS Protection	5% max. THD @ 80% (non-linear load) ±4% for 100% Step Load Change 0.5 msec Recovery Time 110% for 10 minutes 200% for 0.5 seconds 92% (Typical Full Load) Input and output short circuit Input and output overload Excessive battery discharge
Environmental Operating Temperature Humidity Altitude Noise Level	32° F to 122° F (0° C to 50° C) 0% to 95% (non-condensing) Sea level to 10,000 ft. 39 to 42 dBA at 5 ft.
Mechanical Cooling Installation Input Outputs	Low velocity, temperature controlled, reversible, forced air Adjustable front faceplate CPC 12 Locking inlet 6 ft. (min.) power cord with NEMA Type 5-15P 2 NEMA Type 5-15R and 2 NEMA L5-15R Connectors
Design Standard Features Compliant to: Specifications: MTBF	Power Factor Corrected Digital Regenerative™ On-Line Sinewave Inverter Powers Load Continuously Extended Brownout Protection Designed for Non-linear Loads Input Dipole Circuit Breaker Automatic Bypass Ruggedized, Aluminum Chassis and Internal Shock Mounting AC Output Switch Switch Guards Washable Air Filter Heavy Duty Slide Mounts Predrilled for Optional Jonathan 145-QD Slides Auxiliary Battery Connector Rear Mounted Ground Stud MIL-HDBK-2036, 1399, 461C/D (in shielded rack) UL Design FCC Class A IEEE 587/ANSI C62.41 In excess of 100,000 hours
Controls and Indicators Sequenced LEDs Single LED	Battery level Load level AC Input Inverter On Bypass On On Battery Fault Cold Start AC Output Replace Battery

Specification	Parameter
Controls and Indicators (cont.) Front Panel Controls	Power On Cold Start Fault Silence Battery Test AC Output On/Off
Rear Panel Controls (optional, isolated units only) Audible Alarms	120/220 VAC Input Source Voltage Select Switch Utility Interrupt Inverter Failure Overload Low Battery
RS-232 Data Interface (DB-25F)	Full interactive remote computer monitoring and control of UPS functions. Compatible with systems enhancement UPS monitor and control software.
NAVMACS II (open-collector, DB- 25F)	Allows alarm function monitoring.
Optional SNMP Interface (RJ-45 or BNC)	Allows full control and monitoring over network connection. Compatible with HP Openview™, Netview™ and CA Unicenter™.

425-2.2.9 [RFP] Video Matrix Switch.

425-2.2.9.1 [RFP] For Information Only: The equipment meeting this requirement in use on Coast Guard platforms is model # SM-4X2-15V-LCD, manufactured by Network Technologies, Inc.

Table 425-11

Specification	Parameter
Operating Temperature	-0.4° F to 131° F (-18° C to 55° C)
Operating Humidity	17 – 90% non-condensing RH
Storage Temperature	-22° F to 140° F (-30° C to 60° C)
Storage Humidity	17 – 90% non-condensing RH
Video Connectors	15HD female
RS232 Connector	9 pin DIN male
Input Signal Video Bandwidth Sync	RGB analog (75 ohms, 0.7 Vp-p) 200MHz (typical) or greater H/V separated (TTL), composite, sync-on-green
Configuration Options	50 feet maximum operating range between transmitter and front of matrix switch/receiver Up to 20 selectable outputs Video inputs can be independently connected to any or all video outputs
Matrix Options	Reset single unit Reset all units Change single output Change all outputs Read single output
Matrix Options (cont.)	Read the matrix unit size Return to main menu

Specification	Parameter
Setup Options	Set COM port Set baud rate Set unit address Return to main menu
Control Options	Three control methods including Front Panel Keypad, RS232, or infrared Standard Front Panel Keypad Standard RS232 No software necessary for infrared control No external devices necessary with RS232 option
Connector Options	All male VGA input connectors All VGA output connectors female
Miscellaneous Bandwidth Supported Video Resolution Compatibility Chassis	200mHz 1900x1200 Supports video inputs from VGA (15HD-H&V Sync) only Built to specific size (i.e., for SM-nXm, n=video sources, m=outputs)

425-3 [RFP] Electronics Charts

425-3.1 [RFP] SCCS/COMDAC INS is designed to work with the following electronic chart standards:

425-3.1.1 [RFP] S-57 (official charts issued by national Hydrographic Offices).

425-3.1.2 [RFP] NIMA VPF/DNC.

425-3.1.3 [RFP] NDI/BSB by NOAA (USA) and CHS (Canada).

425-3.2 Electronic charts shall be provided as GFI.

425-4 [A009] Reserved

425-4.1 [A009] Reserved.

425-4.1.1 [A009] Reserved.

425-4.1.2 [A009] Reserved.

SECTION 430. [RFP] INTERIOR COMMUNICATION SYSTEMS (IC)**430-1 [RFP] General and Performance Requirements**

- 430-1.1 [A010] IC systems shall also meet the environmental and functional requirements of [46 CFR, Subchapter J](#), and [IEEE-STD-45](#). The recommendations given in [IEEE-STD-45](#) shall be interpreted as requirements. Throughout the text of the document, the word "shall" shall be substituted for the words "may" or "should", and the word "required" shall be substituted for the word "recommended".
- 430-1.2 [RFP] IC systems shall include systems which transmit and receive orders and information within the FRC-B.
- 430-1.3 [RFP] IC control and indicating systems essential to the control and maneuvering of the FRC-B shall be integrated into and be compatible with the FRC-B control consoles.
- 430-1.4 [A010] Disconnect switches shall be installed for IC systems. Built-in disconnects in existing hardware or other comparable safety features shall be submitted to the Contracting Officer for review to verify the built-in disconnects meet the same functionality of the external disconnects required in this COR Section.

SECTION 431. [RFP] INTERIOR COMMUNICATION PANELBOARD**431-1 [RFP] General and Performance Requirements**

- 431-1.1 [A010] IC panelboards shall be installed for control, power distribution, and signal distribution of interior communications systems and electrical navigation systems. These panelboards shall contain power and signal buses (non-digital), distribution switches, circuit protection devices, action cutout and transfer switches, indicating devices, and other electrical devices necessary for IC power and signal distribution. An IC load summary and system capacity calculations shall be prepared for each IC panelboard. ([CDRL 431-001](#))
- 431-1.1.1 [A010] IC systems which provide the ability to isolate damaged circuits, to optimize any required signal or power amplification needed to support multiple loads and allow the operator a starting point for troubleshooting need not pass through the IC panelboard. If all IC systems provide this capability, an IC panelboard is not required.
- 431-1.2 [RFP] Synchro circuits shall not be used.
- 431-1.3 [A010] Except for digital voice circuits, digital signals shall not pass through the IC Pannelboard. Non-voice digital signals shall be handled by the Digital Data Switchboard required in COR SECTION 413.

SECTION 432. [RFP] TELEPHONE SYSTEMS**432-1 [RFP] Scope**

- 432-1.1 [RFP] The Telephone systems on board the FRC-B shall consist of a commercial Private Branch Exchange (PBX) telephone system and an interior sound powered phone system. Cellular telephone systems and Satellite telephone systems are covered in COR Sections 440-14, 440-15, 440-16, and 440-17.

432-2 [RFP] Commercial Telephone System

- 432-2.1 [RFP] A telephone system shall be installed that will provide commercial telephone service, including facsimile and data transmission, for the FRC-Bs when in port. In addition, the system shall be capable of providing intercom/paging service.

- 432-2.1.1 [A009] The telephone system shall be Joint Interoperability Test Command (JITC) certified.

- 432-2.2 [RFP] Equipment Specification. - The telephone system shall have the following features:

- 432-2.2.1 [RFP] Dial Intercom.
- 432-2.2.2 [RFP] Multi-line Access (4 lines minimum)
- 432-2.2.3 [RFP] Call Hold and Retrieve
- 432-2.2.4 [RFP] Call waiting.
- 432-2.2.5 [RFP] Over-ride busy signal.
- 432-2.2.6 [RFP] Messaging.
- 432-2.2.7 [RFP] Announcing to PA system.
- 432-2.2.8 [RFP] Conference calling.
- 432-2.2.9 [RFP] Call Transfer.
- 432-2.2.10 [RFP] Camp-on.
- 432-2.2.11 [RFP] Dial call pickup.
- 432-2.2.12 [RFP] Reset features.
- 432-2.2.13 [RFP] Alarm Indication.
- 432-2.2.14 [RFP] Built-in Diagnostics.
- 432-2.2.15 [RFP] Directory.
- 432-2.2.16 [RFP] Voice Mail.
- 432-2.2.17 [RFP] Office Speaker Phones.

- 432-2.3 [RFP] The integrated PBX system shall provide voice switch capabilities to interconnect with the following:

- 432-2.3.1 [A009] Reserved.
- 432-2.3.2 [RFP] Local PBX or Public Switched Telephone Service or leased trunking service.

- 432-2.3.3 [RFP] Either POTS (Plain Old Telephone Service), ISDN (Integrated Services Digital Network), or VoIP (Voice over Internet Protocol) telephones.
- 432-2.3.4 [RFP] Loudhailers.
- 432-2.3.5 [RFP] Dedicated speakers.
- 432-2.3.6 [RFP] Unclassified facsimile equipment.
- 432-2.3.7 [RFP] Announcing systems.
- 432-2.3.8 [RFP] Secure Terminal Equipment (STE).
- 432-2.3.9 [A009] The Secure Voice Switching System (SVSS).
- 432-2.3.10 [RFP] Cellular Telephones.
- 432-2.4 [RFP] At least one shore tie connection box shall be provided.
 - 432-2.4.1 [RFP] The shore tie connection box(es) shall be waterproof, corrosion-proof, and handle a minimum of six lines (four voice lines with lightning arrestors and two data lines without lightning arrestors).
- 432-2.5 [RFP] The integrated PBX system shall include Group circuiting and trunking for conference and monitoring.
- 432-2.6 [RFP] A System Administration Terminal shall be provided to control and set-up the interior voice switch and services.
- 432-2.7 [RFP] The integrated PBX system shall be capable of accepting audio from the Entertainment Rack AM/FM Receiver.
- 432-2.8 [RFP] Installation Requirements. - Telephones shall be located as in the following locations at a minimum (the handset shall be designed to stay secure under the conditions described in COR [Section 070](#)):
 - 432-2.8.1 [RFP] All Berthing and Stateroom Compartments.
 - 432-2.8.2 [RFP] Pilothouse.
 - 432-2.8.3 [RFP] Messdeck.
 - 432-2.8.4 [RFP] Engine Room.
 - 432-2.8.5 [RFP] All Electronic Equipment/Secure spaces.
 - 432-2.8.5.1 [RFP] At least one phone must be located so that personnel working at the computer network server(s) can use the phone simultaneously while working on the server.
 - 432-2.8.6 [RFP] Ship's Office.
 - 432-2.8.7 [RFP] Any compartment which will be used as a control or office space.
- 432-2.9 [RFP] A shore tie telephone connection box shall be installed immediately adjacent to each electrical shore tie. The shore tie telephone lines shall connect into the bottom of the box via a multi-pin connector. The multi-pin connector shall route the voice lines via lightning arrestors and the data lines directly, contained in the shore tie connection box, to the key service unit.
 - 432-2.9.1 [RFP] A shore tie cable of 30m (98 ft) shall be provided and sized to provide a connection between commercial telephone service and the cutter's telephone system.

- 432-2.10 [RFP] Information plates shall be provided and installed at each telephone station listing all stations that can be called and their station number.
- 432-2.11 [RFP] The phone system shall comply with the general requirements listed in [IEEE-STD-45](#). The system design shall include 10% circuit growth.
- 432-2.12 [RFP] Telephone sets in engine-rooms and shipboard locations where ambient noise levels rise above 72dBA shall be installed in sound proof enclosures fitted with a white flashing light to alert personnel within that space of an incoming call.
- 432-2.13 [RFP] The telephone system shall have a portable attendant console for programming and use at any quarterdeck location. This console shall be weather proof.
- 432-2.14 [RFP] The telephone system shall be provided back-up battery power through a UPS sized for 30 minutes of uninterrupted operation.

432-3 [RFP] Sound Powered Phone System

- 432-3.1 [RFP] A Sound Powered Phone System shall be provided as a backup for communication between administrative and operational stations, and as the primary means for communication during refueling and emergency situations.
- 432-3.2 [RFP] The performance criteria/design shall include:
- 432-3.2.1 [RFP] 1JV - Maneuvering and Docking Circuit. - This circuit shall provide a means of communication for the coordination of the following FRC-B operations:
- 432-3.2.2 [RFP] Changes in engine speed
- 432-3.2.2.1 [RFP] Steering orders in event of failure of the steering system
- 432-3.2.2.2 [RFP] Line handling orders
- 432-3.2.2.3 [RFP] Anchoring orders
- 432-3.2.2.4 [RFP] Fueling at sea (FAS)
- 432-3.2.3 [RFP] 1JP - Weapons Control Circuit. - This circuit shall provide a means of communication for control of the machine guns.
- 432-3.2.4 [RFP] 2JV – Engineering Circuit. This circuit shall provide communications for engineering spaces with the bridge.
- 432-3.2.5 [RFP] 2JZ – Damage Control. This circuit shall provide communications for damage control purposes.
- 432-3.3 [A009] The circuits indicated shall be installed with phone jacks in the following locations:

Location	1JV Circuit	1JP Circuit	2JV Circuit	2JZ Circuit
Pilothouse	X	X		X
Engine Room at each engine control panel	X		X	
Generator Room (if applicable)	X		X	
Messdeck	X			
Each berthing compartment	X			

Location	1JV Circuit	1JP Circuit	2JV Circuit	2JZ Circuit
CO's Head	X			
Fwd Main Deck	X			
25mm Gun Mount		X		
.50 Caliber Gun Mounts		X		
Aft Main Deck	X			
Gyro Repeaters	X		X	
After Steering Room	X		X	
Repair Lockers				X
Fuel Transfer Manifold			X	
Weather deck Refueling Station			X	

- 432-3.4 [RFP] The pilothouse jack boxes (1JV and 1JP) shall be tied to a cross-connect switch allowing cross-connection of the independent 1JV and 1JP circuits. The switch shall have permanent labeling designating the positions of operation.
- 432-3.5 [RFP] Storage boxes for head-chest sets shall be provided in the following locations: Deck Locker, Engine Room ((1) dual and (2) singles), and Lazarette. Jack boxes exposed to the weather shall be provided with watertight storage boxes.
- 432-3.6 [RFP] Bulkhead mounted sound powered telephones shall be installed in the following compartments: Pilothouse (1JV, 1JP), Engine room (1JV), Generator room or generator location (1JV), Berthing Compartments (1JV), and Messdeck (1JV).
- 432-3.7 [RFP] Two-jack, jack boxes shall be provided for each circuit installed in compartments where bulkhead mounted sound powered telephones are required to enable the use of the bulkhead phone and/or the head-chest set.
- 432-3.8 [RFP] Call system capabilities shall be provided between the following stations: Pilothouse, Engine Room, Generator Room or generator location, Messdeck, and Berthing Compartments. Equipment for this system shall include an audible signal at the called station. These devices shall be located in the vicinity of the bulkhead telephones. Head-Chest sets shall be installed in these compartments. If an electric call system is provided, it shall be provided with back-up emergency power.
- 432-3.9 [RFP] Cutout switches shall be provided for all circuits.
- 432-4 [RFP] Facsimile (FAX) Machine**
- 432-4.1 [RFP] A commercial FAX Machine shall be provided and connected to the integrated PBX system. The FAX machine shall not require the use of thermal paper.

SECTION 433. [RFP] ANNOUNCING SYSTEMS**433-1 [RFP] Scope**

- 433-1.1 [A009] This Section sets forth the general requirements for the FRC-B's announcing systems.
- 433-1.2 [RFP] The announcing system provides a shipboard general announcing capability (1MC circuit) for both alarms and general announcements.

433-2 [RFP] Performance and General Requirements

- 433-2.1 [RFP] The FRC-B's announcing systems are:
 - 433-2.1.1 [RFP] General Announcing System (1MC).
 - 433-2.1.2 [RFP] Loudhailer (6MC).
 - 433-2.1.3 [A009] Reserved.
- 433-2.2 [RFP] General Announcing System (1MC).
 - 433-2.2.1 [RFP] Configuration – The 1MC system shall include the following sub-systems:
 - 433-2.2.1.1 [RFP] Amplifier Control Group.
 - 433-2.2.1.2 [RFP] Alarm Generator/Switch Unit.
 - 433-2.2.1.3 [RFP] System Control Station (SCS), installed in the pilothouse, which includes:
 - 433-2.2.1.3.1 [RFP] Microphone Control Station.
 - 433-2.2.1.3.2 [RFP] Collision Alarm Contactor.
 - 433-2.2.1.3.3 [RFP] General Alarm Contactor.
 - 433-2.2.1.3.4 [RFP] Chemical Alarm Contactor.
 - 433-2.2.1.3.5 [RFP] Shipboard Loud Hailer System control (6MC).
 - 433-2.2.2 [RFP] Installation Requirements. - All speakers and cabling runs shall be connected to the SCS and interconnections to the amplifier control group. The systems shall remain operable on emergency power.
 - 433-2.2.3 [RFP] Alarms
 - 433-2.2.3.1 [RFP] The three alarm contactors shall be installed at the SCS and connected to the alarm generator. The General, Collision, and Chemical Alarm Contactors shall be labeled as follows:
 - 433-2.2.3.2 [RFP] The general alarm contactor shall be red and shall be labeled "GENERAL ALARM".
 - 433-2.2.3.3 [RFP] The collision alarm contactor shall be yellow and shall be labeled "COLLISION ALARM".
 - 433-2.2.3.4 [RFP] The chemical alarm contactor shall be green and shall be labeled "CHEMICAL ALARM".
 - 433-2.2.3.5 [RFP] The system shall provide Alarms over the available preconfigured zones.

- 433-2.2.4 [RFP] Microphone Control Station. - The microphone control station shall be located in the pilothouse with separate microphone, microphone jack connection, and four (4) switches for activating groups of loudspeakers, located as specified in COR Section 433-2.2.5. The switches shall be labeled TOPSIDE, CREW, ENGINEERING SPACES, and LOUD HAILER, respectively. All switches, except for the loud hailer, shall provide for independent or simultaneous operation of the designated speaker groups. The LOUD HAILER switch shall simultaneously activate the loud hailer speaker (see COR Section 433-2.3.1) and disconnect all other speaker groups.
- 433-2.2.5 [RFP] Loudspeaker Locations. - The spaces served by the 1MC speakers shall be divided into functional groups as follows:
- 433-2.2.5.1 [RFP] Group 1 - Crew's Spaces
- 433-2.2.5.1.1 [RFP] Berthing Compartments
- 433-2.2.5.1.2 [RFP] Messdeck
- 433-2.2.5.1.3 [RFP] Passageways
- 433-2.2.5.2 [RFP] Group 2 – Topside
- 433-2.2.5.2.1 [RFP] Weatherdeck, Forward
- 433-2.2.5.2.2 [RFP] Weatherdeck, Aft
- 433-2.2.5.2.3 [RFP] Open Bridge (if provided).
- 433-2.2.5.3 [RFP] Group 3 - Engineering Spaces
- 433-2.2.5.3.1 [RFP] Engine room
- 433-2.2.5.3.2 [RFP] Generator room (if separate from engine room)
- 433-2.2.5.3.3 [RFP] Steering Spaces.
- 433-2.2.5.3.4 [RFP] Unclassified and Secure Electronics Equipment Spaces.
- 433-2.2.6 [RFP] Loudspeaker Installation. - The locations of loudspeakers shall be selected using the guidance and criteria of [NAVSEA S9AA0-AA-SPN-010/GEN-SPEC](#), Section 433.
- 433-2.2.7 [RFP] Weather deck speakers assigned to Group 2 shall include hands off talk back features.
- 433-2.2.8 [RFP] The 1MC system shall provide announcing over both single and multiple zones.
- 433-2.2.9 [RFP] Loudspeakers shall be adjustable and have the ability to raise or lower the volume to be 10 dB above ambient noise levels.
- 433-2.3 [RFP] Loud Hailer System (6MC).
- 433-2.3.1 [RFP] The LOUD HAILER switch on the SCS shall serve to activate the ship-to-ship loud hailing system. All-weather speakers with 360° directional coverage shall be provided and installed on top or above the pilothouse for this purpose. The LOUD HAILER switch on the SCS shall connect the general announcement amplifier to the horn speakers and disconnect all other speakers.
- 433-2.3.2 [A010] Reserved.

433-2.3.2.1 [A010] Reserved.

433-2.4 [RFP] The announcing systems shall be integrated with the telephone system, COR Section 432-2.3.7.

433-3 [RFP] Design Standards and Criteria

433-3.1 [RFP] Equipment installed in exterior locations shall be watertight as defined in [NEMA PUB 250](#) or equivalent.

433-3.2 [RFP] Shipboard Announcing System Loudspeakers for unexposed spaces shall comply with the requirements of [FED SPEC A-A-59002/1](#).

433-3.3 [RFP] Shipboard Announcing System Loudspeakers for exposed spaces shall comply with the requirements of [FED SPEC A-A-59002/2](#).

433-3.4 [RFP] The required shipboard alarms will be provided by the integrated tone generator with the applicable (Collision, Chemical, and General) alarm signal characteristics as defined in [FED SPEC A-A-59003](#), 2.5.5.

SECTION 434. [RFP] ENTERTAINMENT AND TRAINING SYSTEMS**434-1 [RFP] Entertainment System**

434-1.1 [RFP] An Entertainment and Training System shall be provided and installed on the Messdeck.

434-1.2 [RFP] The equipment described below shall be provided and installed to create the entertainment system. The equipment provided shall not be designated "portable" by the manufacturer:

<u>Qty</u>	<u>Description</u>
1	Television, color, Liquid Crystal Display (LCD), 32 in. (minimum), flat-screen, High Definition (1080p), cable ready, remote controlled
1	DVD Video player/recorder, stereo, progressive scan
1	Omni-directional TV/AM/FM Receiving Antenna
1	Satellite TV Antenna System (COR Section 434-1.2.3)
1	VHF-FM-UHF Signal Splitter
1	Impedance Matching Transformer (300Ω-75Ω)
1	AM/FM Stereo / Surround-Sound Processor/Receiver
1	Stereo Surround-Sound Speaker Set (5.1 minimum)

434-1.2.1 [RFP] Space, weight, and power shall be reserved for a satellite TV receiver to be furnished by the crew after delivery.

434-1.2.2 [RFP] A "Cable TV" shore tie connection shall provide video data for the Entertainment System.

434-1.2.2.1 [RFP] The shore tie connection shall be located immediately adjacent to each telephone/data shore tie and shall allow for a type F coaxial connector on the "Cable TV" shore tie to connect to the cutter.

434-1.2.2.2 [RFP] A "Cable TV" shore tie shall be provided. This shore tie shall be fabricated from 45m (approximately 150 ft) of Quad-shielded RG-6 coaxial cable. The ends shall be terminated in compression-fit type F connectors.

434-1.2.3 [RFP] A Satellite TV Antenna System shall be installed. The Satellite TV Antenna System shall meet the following requirements:

434-1.2.3.1 [RFP] Digital Video Broadcasting (DVB®) Compatible.

434-1.2.3.2 [RFP] Automatically identifies, acquires, and tracks satellite signals.

434-1.2.3.3 [RFP] Able to provide High Definition (1080p) TV signals.

434-1.2.3.4 [RFP] Dual circular antenna type, compatible with reception in North America.

434-1.2.3.5 [RFP] Minimum Effective Isotropic Radiated Power (EIRP) of 47 dBW.

434-1.2.4 [RFP] The Entertainment and Training System shall provide for the distribution of entertainment radio, broadcast television, and selected satellite television services to CO, XO, and CPO berthing spaces.

SECTION 436. [RFP] ELECTRICAL ALARM, SAFETY AND WARNING SYSTEMS**436-1 [RFP] Scope**

- 436-1.1 [RFP] This Section sets forth the requirements for shipboard electrical alarms, safety, and warning systems which shall consist of the following:
- 436-1.1.1 [RFP] Fire and smoke detection system (circuit SM).
 - 436-1.1.2 [RFP] Flooding alarm system (circuit FD).
 - 436-1.1.3 [RFP] Steering gear power failure alarm system (circuit PF1).
 - 436-1.1.4 [RFP] Autopilot power failure alarm system (circuit PF2).
 - 436-1.1.5 [RFP] Gyrocompass failure alarm system (circuit LC).
 - 436-1.1.6 [RFP] Steering failure alarm system (circuit LA).
 - 436-1.1.7 [RFP] Whistle control system (circuit W).
 - 436-1.1.8 [RFP] Steering system hydraulic loss of pressure alarm.
 - 436-1.1.9 [RFP] Alarm Monitoring System.
 - 436-1.1.10 [RFP] Refrigerant Leak Detection.
 - 436-1.1.11 [A009] High Temperature Alarm System.
 - 436-1.1.12 [A009] Sprinkling System Alarm.
- 436-1.2 [RFP] The requirements for the following shipboard electrical alarm, safety, and warning systems are as identified in the applicable COR Section:
- 436-1.2.1 [RFP] FM-200® release alarm (circuit 1FR).
 - 436-1.2.2 [RFP] Sewage tank level alarms (circuit ST).
 - 436-1.2.3 [RFP] General alarm system (circuit G).
 - 436-1.2.4 [RFP] Bilge monitor alarm.
 - 436-1.2.5 [RFP] Eye/Facewash station alarm.
- 436-1.3 [RFP] In addition to other alarms installed in the pilothouse, alarm panels for the main diesel engines and ship's service diesel generators shall be installed in the pilothouse. Engine alarms shall be displayed on a centralized alarm system. See COR section [202](#) for the centralized alarm requirements of MCMS.

436-2 [RFP] Design Standards and Criteria

- 436-2.1 [A009] The flooding and high temperature alarms and whistle control systems shall meet the design, performance, application, and installation requirements of [NAVSEA S9AAO-AA-SPN 010/GEN-SPEC](#), Section 436. The gyrocompass failure alarm system shall meet the requirements of [IEEE-STD-45](#).
- 436-2.2 [RFP] The fire and smoke detection system, steering gear power failure alarm and engineer's assistance needed alarm shall comply with [SOLAS](#) II-2, Part A, Reg 12 and II-1, Part C, Reg 30 requirements.
- 436-2.3 [RFP] The fire and smoke detection system shall also meet the requirements of [NFPA 72](#) and [ASTM F1198](#).

- 436-2.4 [RFP] The sprinkling alarms, gyro failure alarm and whistle control systems shall meet the requirements of [IEEE-STD-45](#)
- 436-2.5 [RFP] Door alarms shall comply with the general requirement for physical security in [COMDTINST M5530.1](#).

436-3 [RFP] Performance and General Requirements

- 436-3.1 [RFP] Electrical alarm, safety, and warning systems identified in COR Section 436-1.1 shall be provided in accordance with the requirements of the referenced standards and this Section.
- 436-3.1.1 [RFP] Power shall be supplied to these systems in accordance with COR [Section 320](#).
- 436-3.2 [RFP] Unless specifically required to be totally independent by one of the referenced standards, all electrical alarm, safety, and warning systems identified in COR Section 436-1.1 shall provide status and alarm conditions to the operators via the MCMS system. See COR Section [202](#) for the display requirements of MCMS.
- 436-3.3 [RFP] Fixed Fire Detection and Fire Alarm System.
- 436-3.3.1 [RFP] The fire detection/alarm system shall have [46 CFR 161.002](#) Coast Guard approval and shall meet the requirements of Regulations 13 (inclusive), 14 (inclusive), 36-1 and 36-1.1 in Chapter II-2 of [SOLAS 74](#) (including amendments thru 2006).
- 436-3.3.2 [RFP] All detectors shall be individually identified (addressable) on the control panel. Detectors shall provide complete coverage of the FRC-B to facilitate rapid identification of fire/smoke location and easy identification of faulty detectors.
- 436-3.3.3 [RFP] Each detector providing coverage of crew's berthing compartments shall activate an audible and visual alarm indication in the passageway(s) common to the compartments covered by the zone.
- 436-3.3.4 [RFP] Photoelectric light obscuration smoke detectors shall be used in adverse environments such as machinery compartments, where significant concentration of hydrocarbon vapors and other gases could have adverse affect on detector sensitivity. Smoke detectors shall not be located directly in the air stream of ventilation supply registers.
- 436-3.3.5 [RFP] In addition to detectors provided as part of the Coast Guard approved fire detection/alarm system, infrared flame detectors shall be installed in the engine room to provide 100% coverage. Detectors shall be installed in accordance with the manufacturer's recommendations to provide this coverage.
- 436-3.3.6 [RFP] The alarm system shall be capable of operating as a standalone system. The alarm system shall be capable of independent operation from all other shipboard electrical systems to carry out all of the required monitoring and alarming functions.
- 436-3.4 [RFP] Steering Gear Power Failure Alarm System. - A steering gear power failure alarm system shall be installed to provide indication in the pilothouse and the engine room of the interruption of power to the steering gear system.

- 436-3.5 [RFP] Autopilot Power Failure Alarm System. - An autopilot power failure alarm system shall be installed to provide indication in the pilothouse of the interruption of power to the autopilot.
- 436-3.6 [RFP] Gyrocompass Failure Alarm System. - A gyrocompass failure alarm system shall be installed to provide indication in the pilothouse of power or signal failure.
- 436-3.7 [RFP] Alarm Monitoring System
- 436-3.7.1 [RFP] An Alarm Monitoring System shall be provided and installed in accordance with [COMDTINST M5530.1C](#) that will activate upon the intrusion of the small arms and ready service lockers. The system will be armed through the use of a key pad or a (CRES or aluminum) keyed switch and when activated due to intrusion of either of the lockers will display a visual alarm and generate an audible tone identical to that of the chemical alarm. The system will also activate upon detection of smoke, fire, or flooding conditions by the current alarm systems aboard the FRC-B required by applicable sections of the COR. The system shall be capable of "exporting" the alarm by auto-dialing at least three telephone numbers that are programmed by the watchstander. The system shall be capable of re-dialing a telephone number if that number is busy. A pre-recorded voice alarm shall report the vessel's name and the type of alarm that has been activated. The system shall be able to be activated or deactivated by the watchstander.
- 436-3.7.1.1 [RFP] Intrusion alarm sensors shall be installed on all exterior entrances to the FRC-B as well as the entrance to any interior secure space. They shall be integrated into the alarm monitoring system described above.
- 436-3.8 [RFP] Flooding Alarm Repeater
- 436-3.8.1 [RFP] Flooding Alarm Repeater. – The flooding alarm circuit shall be connected to sound over the 1MC announcing circuit. It shall have its own distinct tone to prevent confusion with other alarm notification.
- 436-3.9 [RFP] Sprinkling System Alarm
- 436-3.9.1 [A009] The activation of any sprinkling system shall be alarmed at a manned centralized control and monitoring location.

SECTION 437. [RFP] INDICATING, ORDERING, AND METERING SYSTEMS FOR NAVIGATION**437-1 [RFP] General Requirements**

- 437-1.1 [RFP] The following general requirements apply to all indicating, ordering, and metering systems.
- 437-1.2 [RFP] Power supply equipment for system operation and interface with the FRC-B's navigation systems shall be supplied in accordance with COR [Section 320](#). Signal conversion /conditioning devices, where used, shall be incorporated at the signal load and shall meet the requirements of COR SECTION 413. Circuit isolation protection shall be provided.
- 437-1.3 [RFP] Transmitters/transducers shall be installed so as not to degrade measurement accuracy beyond acceptable limits.

437-2 [RFP] Gyrocompass System (Circuit LC)

- 437-2.1 [RFP] A gyrocompass system shall be installed to provide the FRC-B's heading data at the steering and navigation stations, and to provide FRC-B heading data to the Primary Surface Search Radar (COR Section 451-1), ECINS (COR Section 425-1.1.3), C2 (COR Section 410-2.2.1), and other systems requiring this information. Gyrocompass output data shall be distributed via the Digital Data Switchboard, COR SECTION 413. Digital signals of NMEA 0183, version 2.1 or later standards are the preferred method for transmitting data from the gyrocompass to other electronic equipment.
- 437-2.2 [RFP] The gyrocompass shall also provide non-NMEA 0183 compliant data reflecting current ship's attitude and attitude rate data at rates faster than that supported by NMEA 0183.
- 437-2.2.1 [RFP] The gyrocompass shall comply with the requirements of [IEEE-STD-45](#), Section 30. Gyro compass systems.
- 437-2.3 [RFP] The gyrocompass shall be provided with fail-safe protection such that the system is automatically restarted once power is restored after an outage.
- 437-2.4 [RFP] The master gyrocompass shall provide a heading indication.
- 437-2.5 [RFP] The gyrocompass heading error shall not exceed 0.5°. The gyrocompass shall indicate true North to within its design accuracy no more than 6 hours after being placed in service. Controls shall be provided which enable the gyrocompass to be preset to its settled position (approximately). The gyrocompass heading shall not deviate beyond its design accuracy when operated in a magnetic field of 1 Oersted. The gyro shall be provided with automatic speed and latitude correction.
- 437-2.6 [RFP] The placement of the master steering repeater and the magnetic compass at the helmsman's station shall allow the operator to use either display for steering operations.
- 437-2.7 [RFP] The gyrocompass system equipment shall be installed in accordance with the requirements of [IEEE-STD-45](#), 46 CFR Subchapter J, Subpart [113.30-5](#), [96.17](#), [195.19](#) and [SOLAS V](#), Regulation 12.
- 437-2.8 [RFP] The gyrocompass shall be provided emergency and transitional power.

437-3 [RFP] Underwater Speed Log System (Circuit Y)

- 437-3.1 [RFP] A speed log system shall be installed. The log shall provide continuous measurement of the FRC-B's longitudinal and transverse speeds through the water.
- 437-3.2 [RFP] All Speed Logs shall be Dual Axis to provide forward and athwartships movement.
- 437-3.3 [RFP] The transducer shall be of the flush mounted type and designed to withstand the forces encountered during operations.
- 437-3.3.1 [RFP] A sea valve shall be provided for removing or replacing Speed Log transducers to allow for maintenance and repair from within the FRC-B while underway.
- 437-3.4 [RFP] Data from the speed log system to the pilothouse display unit and any other systems requiring this data, such as the ECINS and C2 system, shall be supplied via the Digital Data Switchboard, COR SECTION 413. Digital transmission of data in NMEA 0183, version 2.1 or later, standard is required.
- 437-3.5 [RFP] The system shall be capable of operating in a water lock mode with a minimum of 6 meters of water under the transducer. In the bottom lock mode (if provided), it shall be capable of operating with a range of 2m to 200m of water under the transducer.
- 437-3.6 [RFP] The longitudinal speed range shall be from 0 to (Flank speed plus 5) knots ahead and from 0 to 8 knots astern. The athwartship speed range shall be a minimum of 0 to 8 knots, port and starboard. In no case shall the inaccuracy exceed +/- 1% of the actual longitudinal or athwartship speed.
- 437-3.7 [RFP] The speed log system shall provide automatic compensation for roll and pitch, and for variations in water salinity and temperature.
- 437-3.8 [RFP] The Speed Log shall meet the requirements of IMO Resolution [A.478 \(XII\)](#) & [A.824 \(19\)](#).

437-4 [RFP] Rudder Angle Indicator (Circuit N)

- 437-4.1 [RFP] A rudder angle indicator shall be installed in accordance with [IEEE-STD-45](#), Section 26.3 Rudder angle indicator, in the pilothouse such that it can be read from the helm station.
- 437-4.2 [RFP] Rudder angle indicators shall meet the requirements of [46 CFR, Subchapter J](#) and [IEEE-STD-45](#) with respect to design, performance, application, and installation.

437-5 [RFP] Wind Speed and Direction System (Circuit HD and HE)

- 437-5.1 [RFP] A wind speed and direction system shall be installed to provide wind speed and direction data to the pilothouse.
- 437-5.2 [A009] An ultrasonic wind speed and direction transmitter (no moving parts) shall be installed on the mast in a location that will allow for un-obscured operation and in accordance with the manufacturer's recommendations. The transmitter shall measure true and apparent wind speed and direction.
- 437-5.3 [RFP] Wind speed and direction data shall be indicated in the pilothouse, with wind speed to be displayed on a scale with a range of 0 to 100 knots. Wind direction shall be displayed on a 360° scale.

- 437-5.3.1 [RFP] The system shall have a wind speed accuracy of +/- 1.0 knot and a wind direction accuracy of +/- 2.0° over the complete range.
- 437-5.4 [A013] The system shall output wind speed and direction data in [NMEA 0183](#), version 2.1 or later format, to the primary and secondary ECINS and C2 systems required in COR Sections 425-1.1.9 and 410-2.2.1, respectively.
- 437-5.5 [A009] The wind speed and direction system may be provided as part of a single weather system that also provides outside temperature and relative humidity (COR Section 437-7) and barometric pressure (COR Section 437-8).

437-6 [RFP] Self-Correcting Fluxgate Compass

- 437-6.1 [RFP] A self-correcting fluxgate type electronic compass shall be installed in the forward control console forward of the primary operating station. The compass shall be within easy viewing of the helmsman while underway and be visible and readable in all conditions of daylight and darkness.
- 437-6.2 [RFP] The fluxgate compass shall meet the following requirements:
- 437-6.2.1 [RFP] Heading accuracy: +/- 1°.
 - 437-6.2.2 [RFP] Tilt range: +/- 35°.
 - 437-6.2.3 [RFP] Deviation Correction: The fluxgate compass shall be able to accept manually entered variation data and shall have the capability to perform a deviation calibration.
 - 437-6.2.4 [RFP] Minimum data output: The fluxgate compass shall be able to output data via a standard [NMEA 0183](#) (V) 2.1 or greater interface, at 1Hz or greater, with selectable baud rates of 4,800 to 38,400bps.
- 437-6.3 [RFP] Electrical and electronic equipment/components shall be adequately shielded to prevent interference with the proper operation of the compass.
- 437-6.4 [RFP] The display shall have backlighting that can be adjusted anywhere from zero intensity to full intensity.
- 437-6.5 [RFP] The fluxgate compass shall output heading data to a remote heading repeater that shall be installed for use at the emergency steering station.

437-7 [RFP] Outside Temperature and Humidity Sensor

- 437-7.1 [RFP] An outside air temperature and humidity sensor system shall be provided and installed to supply this data to the C2 system.
- 437-7.1.1 [RFP] Data from the air temperature and humidity sensor system shall be displayed on a pilothouse display unit and provided to the C2 system.

437-8 [RFP] Barometer

- 437-8.1 [RFP] A barometer sensor system shall be provided and installed to supply atmospheric pressure data to the C2 system.
- 437-8.1.1 [RFP] Data from the barometer sensor system shall be displayed on a pilothouse display unit and provided to the C2 system.

437-9 [RFP] Depth Sounder System

- 437-9.1 [RFP] The depth sounder system shall provide easily interpreted and definable depth data for all normal operating conditions and under poor acoustic environments while maintaining reasonable speed in heavy weather.

- 437-9.2 [RFP] A depth sounder meeting the following requirements shall be installed in the pilothouse and tested:
- 437-9.2.1 [A010] Display: The depth sounder shall have the capability to graphically plot bottom depth in color. It shall display numeric depth data in feet, meters, and fathoms. Numerically displayed depth digits shall be a minimum of 1" in height. The display unit shall have controls for the contrast, intensity, and backlighting. The display shall be readable in direct sunlight and at nighttime without operator loss of night vision. The depth sounder shall be dual frequency, 50 and 200 Khz. The depth sounder shall have the ability to enter transducer offset. The system shall provide an electronic (video) recorded history of at least 10 minutes and provide a display of the bottom contour.
 - 437-9.2.2 [A010] Compatibility: The depth sounder shall be compatible with the Airmar SS505, P/N 31-088-4-01, and SS555, P/N 31-811-1-01, transducers (specifications can be found at <http://www.airmar.com>). Offers shall include an alternative transducer for purchase.
 - 437-9.2.3 [RFP] Alarm: The depth sounder shall produce a minimum depth audible alarm that is set by the operator.
 - 437-9.2.4 [RFP] Accuracy: The system shall be capable of indicating instant depth with an accuracy better than 2% of the displayed depth throughout the depth range.
 - 437-9.2.5 [RFP] Mode: The depth sounder unit shall have the capability to automatically set the depth scale and sensitivity. At depths less than 6.1m (20ft), the depth shall be displayed in tenths of unit (xx.x); at depths greater than 6.1m (20ft) the depth shall be displayed without decimals (xxx).
 - 437-9.2.6 [RFP] Depth range: 0-183m (0-600 ft) minimum in salt water.
 - 437-9.2.7 [A003] Transducer: 50 and 200 kHz, dual frequency; thru-hull type.
 - 437-9.2.8 [RFP] Minimum data output: The depth sounder shall be able to transmit depth data via a standard [NMEA 0183](#) (V) 2.1 or greater interface, at 1Hz or greater, with selectable baud rates of 4,800 to 38,400bps.
 - 437-9.2.9 [RFP] Minimum data input: The depth sounder shall be able to receive heading, position, and temperature data via a standard [NMEA 0183](#) (V) 2.1 or greater interface, at 1Hz or greater, with selectable baud rates of 4,800 to 38,400bps.
- 437-9.3 [A003] The transducer shall be mounted flush with the hull in a transducer mounting assembly in the transducer well, so that the bottom of the transducer is in a horizontal plane. The installed transducer shall be vertical within 1/2°. The transducer mounting assembly shall provide for watertight flush mounting of the transducer. A method for internal removal and replacement of the transducer while the vessel is waterborne shall be provided. If required to prevent air entrapment or cavitation, a high speed fairing block may be used with the approval of the Contracting Officer.
- 437-9.4 [RFP] The depth sounder shall interface with the ECINS and C2 systems, COR Section 425-1.1.5.
- 437-9.5 [RFP] If the depth sounder display is installed so that it is not in plain sight of the helmsman at the helm station on the console, a remote display shall be provided.

The remote display shall be mounted on the pilothouse console as close to centerline as practical.

SECTION 439. [RFP] RECORDING AND TELEVISION SYSTEMS**439-1 [RFP] Closed Circuit Television (CCTV) Security System**

- 439-1.1 [A009] A system shall be provided to provide video surveillance of the FRC-B's interior and exterior. Complete coverage of the exterior shall be provided; internal coverage shall be provided as a minimum in: machinery spaces, passageways, and common areas. The system shall have the capability to record a minimum of 72 hours of surveillance data on removable media, display multiple selectable cameras and scroll display of selected cameras. The system outputs to display and recording devices shall be formatted NTSC.
- 439-1.2 [RFP] Display of interior and exterior video surveillance data shall be provided in the pilothouse and mess as a minimum. Each display shall be capable of addressing each camera interior and exterior on demand.
- 439-1.3 [A009] All cameras will be high resolution color and day/night capable. Cameras installed on the exterior and interior machinery spaces shall have the ability to pan, zoom, and tilt.
- 439-1.4 [A002] The system shall provide the capability to pass security video signals to/from the FRC-B and shore through a shore-tie connection. The shipboard shore tie connection shall be located with the "Cable TV" shore-tie specified in COR Section 434-1.2.2.

SECTION 440. [RFP] EXTERIOR COMMUNICATIONS AND RADIO SYSTEMS**440-1 [RFP] General Requirements**

- 440-1.1 [RFP] The Exterior Communications and Radio Systems shall provide voice, record radio frequency, cellular telephone bands, commercial and military satellite telephone bands, and other communications. Voice communications shall use the High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), cellular telephone, and Commercial and Military Satellite bands. HF and VHF-FM transceivers shall be provided with back-up emergency power. All exterior communications systems shall be capable of transitioning from the operational (transmitting) mode to the standby (non-transmitting) mode in support of EMCON.
- 440-1.2 [A010] Unless otherwise stated, the control portion of the electronics equipment shall be located in the pilothouse (see COR Section 410-2.1). In lieu of individual remote control heads, an automated integrated communication system that meets all functional capabilities in COR SECTION 440 can be proposed. If proposed, the automated integrated communication system shall not be developmental, require modification, or require certification to meet the requirements of the COR.
- 440-1.3 [RFP] Exterior communications and radio systems shall be installed in electronics racks in compliance with COR Section 400-3.8. As part of this installation, at least 500mm (19.7 in) of vertical unused space shall be reserved for future Coast Guard use. Shelves shall be provided as required to support the equipment installed. Except where otherwise specified, equipment shall be installed within one deck of the pilothouse. Isolation power panels shall be utilized. Positive ventilation (exhaust) shall be provided at the top of the electronics racks. The ventilation must be arranged to also prevent water intrusion into the racks.
- 440-1.4 [RFP] Emergency power shall be provided for mission critical communications equipment in accordance with COR Section [300-4](#).
- 440-1.5 [RFP] Simultaneous Communications Requirements
- 440-1.5.1 [A010] The FRC-B's radio suite shall provide no fewer than the capabilities listed in table 440-1 below:

Table 440-1

Radio Communications Sub-Systems		
Circuit Requirements	Circuits Provided	COR Section
NAVTEX (490 and 518 KHz)	1 Receiver (NAVTEX Receiver)	440-2
HF-ALE (2-30 MHz)	2 Transceivers (Tactical-HFALE #1) (Tactical-HFALE #2)	440-3
HF Receive (2-30 MHz)	2 Receivers (HF-Receiver #1) (HF-Receiver #2)	440-4

Radio Communications Sub-Systems		
Circuit Requirements	Circuits Provided	COR Section
HF DSC GMDSS Watch Receiver (2187.5, 4207.5, 6312, 8414.5, 12577, 16804.5 KHz)	1 Receiver (HF-DSC Receiver)	440-5
VHF Military Tactical (30-88 MHz) VHF-AM Civil Aviation (118-137 MHz)	1 Transceiver (Military-VHF/UHF #1)	440-6
Tactical VHF (137-174 MHz)	2 Transceivers (Tactical-VHF #1) (Tactical-VHF #2) Motorola XTL-5000	440-7
Marine Band VHF DSC Class-A (156.025 to 157.425 MHz)	1 Transceiver (MarineBand-VHF/DSC)	440-8
Marine Band VHF Channel 13 Guard Receiver (156.650 MHz)	MarineBand-13	440-9
Handheld Tactical-VHF & Tactical-UHF Transceiver Battery Chargers	2 Each 6-Bay Battery Charger Banks	440-10
UHF Military LOS UHF Military SATCOM (225.00-399.99 MHz)	2 Transceivers (Military-VHF/UHF #2) (Military-VHF/UHF #3)	440-11
Tactical UHF (380-420 MHz)	2 Transceivers (Tactical-UHF #1) (Tactical-UHF #2)	440-12
Public Safety Interoperability UHF (764-870 MHz)	1 Transceiver (PublicSafety-UHF)	440-13
CDMA Cellular Telephone	2 each Each capable of voice and data.	440-14
COMSATCOM: Telephony (1525-1559 & 1626.5-1660.5 MHz)	1 INMARSAT Mini-M Service Compliant System	440-15

Radio Communications Sub-Systems		
Circuit Requirements	Circuits Provided	COR Section
COMSATCOM: Integrated Services Digital Network (ISDN) Mobile Packet Data Service (MPDS) (1525-1559 & 1626.5-1660.5 MHz)	1 INMARSAT F77+ Service Compliant System	440-16
COMSATCOM: GMDSS Distress Alerting Capabilities (1626.5-1645.5 MHz)	1 INMARSAT C Service Compliant System	440-17
Antenna Matrix Switch	HF-ALE Transceivers VHF/UHF Transceivers	440-18
Secure Voice Switchboard		440-20
Digital Voice Logger (DVL) Audio Recording System		440-21
Emergency Position Indicating Radio Beacon (EPIRB)	2 Category 1 Manually Deployable 406 MHz GPS Embedded EPIRB Transponders	440-22

440-2 [RFP] Medium Frequency (MF) Navigation Telex (NAVTEX) Receiver Sub-System

440-2.1 [RFP] A NAVTEX receiver shall be provided that is capable of receiving both the 518 KHz International NAVTEX Frequency and the 490 KHz domestic or local country frequency. This is not a simultaneous reception capability requirement.

440-2.1.1 [RFP] The operator shall be capable of switching to either frequency.

440-2.2 [RFP] The NAVTEX Receiver shall be Type accepted for GMDSS (must have a label so stating).

440-2.3 [RFP] The receiver shall receive and verify the ID of received messages.

440-2.4 [RFP] The NAVTEX Receiver's messages shall be displayed on a minimum 4.5 inch backlit LCD display and provided as an output to a computer via RS-232 serial data connection.

440-2.5 [RFP] The NAVTEX Receiver's internal memory shall be capable of retaining 28,000 characters received over the past 72 hours.

440-2.6 [RFP] The NAVTEX Receiver shall be capable of receiving, storing, and displaying the following messages:

440-2.6.1 [RFP] Message A: Navigational Warning

- 440-2.6.2 [RFP] Message B: Meteorological Warning
 - 440-2.6.3 [RFP] Message C: Ice Report
 - 440-2.6.4 [RFP] Message D: Search and Rescue information/piracy and Armed Robbery
 - 440-2.6.5 [RFP] Message E: Meteorological Forecast
 - 440-2.6.6 [RFP] Message F: Pilot Message
 - 440-2.6.7 [RFP] Message G: Decca Message
 - 440-2.6.8 [RFP] Message H: Loran-C Message
 - 440-2.6.9 [RFP] Message I: Omega Message
 - 440-2.6.10 [RFP] Message J: Differential Omega Message
 - 440-2.6.11 [RFP] Message K: Other electronic navigational aid and system message
 - 440-2.6.12 [RFP] Message L: Navigational Warning (additional)
 - 440-2.6.13 [RFP] Messages M through Y: Reserved - presently not used
 - 440-2.6.14 [RFP] Message Z: QRU (no message on hand)
 - 440-2.7 [RFP] The operator shall have the ability to enable or disable an alarm condition, with an audible alert provided whenever a message of type A, B, D or L is received.
 - 440-2.8 [RFP] The MF NAVTEX Receiver may, and is encouraged to, share a common HF Receive Antenna with the HF Receivers (COR Section 440-4) and the MF/HF DSC GMDSS Watch Receiver (COR Section 440-5).
- 440-3 [RFP] High Frequency – Automated Link Establishment (HF-ALE) Transceiver Sub-System**
- 440-3.1 [RFP] HF-ALE Transceiver capability shall provide both SECRET and clear voice and data communication between the FRC-B and other ships, boats, forces, and/or aircraft operating in the 2 to 29.9999 MHz range. The operator shall be capable of selecting the appropriate frequency and other modes of operation based on configuration programming conducted by Coast Guard technical support personnel. The system shall consist of HF-ALE transceivers, HF-ALE antenna couplers, HF-ALE antennas, and associated equipment.
 - 440-3.1.1 [RFP] The system shall be equipped to simultaneously support 2 transmit/receive communications circuits in the HF frequency range of 2 MHz to 29.9999 MHz.
 - 440-3.1.2 [RFP] The HF-ALE transceivers shall be capable of a transmission rate up to 9.6 Kbps for an Upper Side Band (USB) or Lower Side Band (LSB) data communications link in accordance with [MIL-STD 188-110B](#) Appendix C.
 - 440-3.1.3 [RFP] The HF-ALE transceivers shall be capable of a transmission rate up to 19.2 Kbps for an Independent Side Band (ISB) data communications link in accordance with [MIL-STD 188-110B](#) Appendix-F to support data modem waveforms on multiple discrete channels.
 - 440-3.2 [RFP] The HF-ALE transceivers shall be certified by the Department of Defense Joint Interoperability Test Command (JITC) to meet Automatic Link

Establishment compliance ([FED-STD-1045](#)) and shall have the following features:

- 440-3.2.1 [RFP] Transmit up to 125 Watts peak envelope power in its operating range.
- 440-3.2.2 [RFP] Operate continuously in the Upper Side Band (USB), Lower Side Band (LSB), Independent Side Band (ISB), or Amplitude Modulation Equivalent (AME) modes.
- 440-3.3 [RFP] The HF-ALE transceivers shall be controllable through Remote Control Heads.
 - 440-3.3.1 [RFP] The HF-ALE Transceiver and HF Receiver (COR Section 440-4) shall use a common, interchangeable Remote Control Head.
 - 440-3.3.2 [RFP] Each HF-ALE transceiver shall be controllable by any of 4 Remote Control Heads without manual intervention other than user interaction with the Remote Control Head.
 - 440-3.3.2.1 [RFP] To support ease of maintenance, a Remote Control Head shall be installed near the HF-ALE Transceiver in the Electronics Equipment Space.
 - 440-3.3.2.2 [RFP] A Remote Control Head shall be installed in the Pilot House in a location protected from rain and sea spray.
 - 440-3.3.3 [RFP] For maximum operational flexibility, each Remote Control Head shall be capable of controlling any of the HF-ALE Transceivers and HF Receivers (COR Section 440-4).
 - 440-3.3.4 [A010] The Remote Control Heads shall be connected to the HF-ALE Transceivers via a common bus shared with the HF Receivers (COR Section 440-4).
 - 440-3.3.5 [RFP] The Remote Control Heads shall be one of the interfaces used to program and configure the HF-ALE Transceiver. This shall include the capability for the operator to input and edit frequency Scan Lists. Manufacturer programming software for the HF-ALE transceivers shall be provided.
 - 440-3.3.6 [RFP] Each Remote Control Head shall be capable of attaching a microphone or handset for local use in the clear (unencrypted) voice mode.
- 440-3.4 [RFP] Each HF-ALE Transceiver shall provide an interface with the Secure Voice Switchboard System (SVSS) (COR Section 440-20.2) for frequency and mode control. This interface shall use RS-422, RS-232, or Ethernet communications protocol.
- 440-3.5 [RFP] The HF-ALE Transceiver units shall be installed in a climate controlled Electronics Equipment Space other than the pilothouse. Sufficient access shall be available for maintenance and repair.
- 440-3.6 [RFP] Each HF-ALE Transceiver shall be interfaced with an ANDVT Type-I Encryption Device located in the Electronics Equipment Space.
 - 440-3.6.1 [A010] Unless the transceivers contain embedded encryption device emulation, electronics rack space shall be reserved for the installation of one ANDVT Type-I Encryption Device for each HF-ALE Transceiver in accordance with COR Section 440-19.1.

- 440-3.6.2 [RFP] Each ANDVT shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter (ALE-Mode, etc) control. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one ANDVT (or other VRC) shall be assigned to any given ROP or RSP at a time. Assigned ROPs shall control the ANDVTs through the SVSS.
- 440-3.6.2.1 [RFP] The interface between the ANDVT and SVSS shall ensure that the ROPs are capable of selecting between the CIPHER and PLAIN modes.
- 440-3.6.2.1.1 [RFP] The SVSS shall acknowledge the first user to depress the Push-To-Talk (PTT) and disable the PTT function for all other users until the PTT is released. The only transmit audio shall be that of the acknowledged first user to depress the PTT. All other users shall be able to hear transmit and receive audio from the connected VRC. CIPHER/PLAIN selection shall be inhibited while the PTT is depressed.
- 440-3.6.2.1.2 [RFP] An ROP shall not be capable of shifting from PLAIN to CIPHER or CIPHER to PLAIN while the Push-To-Talk (PTT) is enabled on any ROP on the circuit.
- 440-3.6.2.2 [RFP] The ANDVT shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the ANDVT. This indication shall identify that the ANDVT is in the CIPHER or PLAIN mode.
- 440-3.6.2.3 [RFP] The ANDVT interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected when in the CIPHER mode.
- 440-3.7 [RFP] The HF-ALE Transceiver sub-system shall include 2 identical vertical marine whip antennas each with a length between 6.1m (20 ft) and 9.1m (30 ft) to support long-range voice and data communications.
- 440-3.7.1 [RFP] The antenna tuners may be remotely mounted from the antennas.
- 440-3.8 [RFP] The HF-ALE Transceiver sub-system shall include a Near-Vertical Incidence Skywave (NVIS) Half-Loop Antenna to support short-range voice and data communications.

440-4 [RFP] High Frequency (HF) Receiver Sub-System

- 440-4.1 [RFP] An HF Radio Receive sub-system capability shall provide both SECRET and clear voice and data reception from other ships, boats, forces ashore, or aircraft operating in the 2 to 29.9999 MHz range. The sub-system shall consist of HF receivers and associated equipment to provide the following capabilities:
- 440-4.1.1 [RFP] Simultaneously support 2 receive-only communications circuits in the HF frequency range of 2 MHz to 29.9999 MHz.
- 440-4.1.2 [RFP] Receiving data at a rate up to 9.6 Kbps for an HF data communications link.
- 440-4.1.3 [RFP] Operating continuously in the Upper Side Band (USB), Lower Side Band (LSB), or Amplitude Modulation Equivalent (AME) modes.

- 440-4.2 [RFP] The HF Receivers shall be controllable through Remote Control Heads required in COR Section 440-3.3.1.
- 440-4.2.1 [RFP] The HF-ALE Transceivers (COR Section 440-2.8) and HF Receivers shall use common, interchangeable Remote Control Heads.
- 440-4.2.2 [RFP] Each HF Receiver shall be controllable by any of 4 Remote Control Heads without manual intervention other than user interaction with the Remote Control Head.
- 440-4.2.3 [A010] The Remote Control Heads shall be connected to the HF Receivers via a common bus shared with the HF-ALE Transceivers (COR Section 440-2.3).
- 440-4.3 [RFP] The HF Receivers shall be installed in a climate controlled Electronics Equipment Space other than the pilothouse. Sufficient access shall be available for maintenance and repair.
- 440-4.4 [A010] Unless the transceivers contain embedded encryption device emulation, electronics rack space shall be reserved for the installation of one ANDVT Type-I Encryption Device for each HF Receiver in accordance with COR Section 440-19.1.
- 440-4.5 [RFP] If available from the manufacturer, programming software for the HF Receivers shall be provided.
- 440-4.6 [RFP] Each HF Receiver shall provide an interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter (wideband, narrowband, etc) control. This interface shall use RS-422, RS-232 or Ethernet communications protocol.
- 440-4.7 [RFP] Each HF Receiver shall be interfaced with an ANDVT Type-I Encryption Device located in the Electronics Equipment Space.
- 440-4.7.1 [RFP] Each ANDVT shall interface with the SVSS. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one ANDVT (or other VRC) shall be assigned to any given ROP or RSP at a time. Assigned ROPs shall control the ANDVTs through the SVSS.
- 440-4.7.1.1 [RFP] The interface between the ANDVT and SVSS shall ensure that the ROPs are capable of selecting between the CIPHER and PLAIN modes.
- 440-4.7.1.2 [RFP] The ANDVT shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the ANDVT. This indication shall identify that the ANDVT is in the CIPHER or PLAIN mode.
- 440-4.7.1.3 [RFP] The ANDVT interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected when in the CIPHER mode.
- 440-4.8 [RFP] A common HF Receive Antenna for each of the HF Receivers, the MF/HF DSC GMDSS Watch Receiver (COR Section 440-5) and the MF NAVTEX Receiver (COR Section 440-2) may be used.

440-5 [RFP] High Frequency (HF) Digital Selective Calling (DSC) Global Maritime Distress and Safety System (GMDSS) Watch Receiver Sub-System

- 440-5.1 [RFP] An HF DSC GMDSS Watch Receiver system meeting the following rules and regulations shall be installed:
- 440-5.1.1 [RFP] International Telecommunications Union – Recommendations (ITU-R) [493-9](#) (Class A), [541-8](#), and [1082-1](#).
 - 440-5.1.2 [RFP] International Electrotechnical Committee ([IEC 61097-3](#), [IEC 61097-8](#), [IEC 61162-1](#), and [IEC 60945](#)).
 - 440-5.1.3 [RFP] International Maritime Organization (IMO) Resolutions [A.804\(19\)](#), [A.806\(19\)](#), and IMO Maritime Safety Committee (MSC) Resolution [MSC.68\(68\)](#) amendment.
 - 440-5.1.4 [RFP] EN 300 338 ([IEC 1097-3](#)) Radio Equipment Systems technical characteristics and methods of measurements for equipment for generation, transmission and reception of Digital Selective Calling (DSC) in the maritime MF/HF and/or VHF mobile service.
- 440-5.2 [RFP] The HF DSC GMDSS Watch Receiver shall have a front panel backlit screen capable of displaying at least 160 characters.
- 440-5.3 [RFP] The HF DSC GMDSS Watch Receiver shall scan the following DSC frequencies for Distress and General Calls:
- 440-5.3.1 [RFP] 2,187.5 KHz.
 - 440-5.3.2 [RFP] 4,207.5 KHz.
 - 440-5.3.3 [RFP] 6,312 KHz.
 - 440-5.3.4 [RFP] 8,414.5 KHz.
 - 440-5.3.5 [RFP] 12,577 KHz.
 - 440-5.3.6 [RFP] 16,804.5 KHz.
- 440-5.4 [RFP] DSC GMDSS Alarms/Notifications.
- 440-5.4.1 [RFP] The HF DSC GMDSS Watch Receiver shall provide audible and visual notification if an HF DSC Distress Alert is received. The receiver shall allow an operator to silence the audible notification from the front panel.
 - 440-5.4.2 [RFP] In addition, an audible notification shall sound and information shall be provided to the front panel when receiving, processing, or displaying the following DSC messages:
 - 440-5.4.2.1 [RFP] All Ships.
 - 440-5.4.2.2 [RFP] Distress Relay All (all ships).
 - 440-5.4.2.3 [RFP] Distress Relay Selective (coast station).
 - 440-5.4.2.4 [RFP] Geographical Area.
 - 440-5.4.2.5 [RFP] Group.
 - 440-5.4.2.6 [RFP] Individual.
 - 440-5.4.2.7 [RFP] Medical Transport.
 - 440-5.4.2.8 [RFP] Neutral Craft.

- 440-5.4.2.9 [RFP] Polling
- 440-5.4.2.10 [RFP] Position.
- 440-5.4.2.11 [RFP] PSTN.
- 440-5.4.2.12 [RFP] Test.
- 440-5.4.3 [RFP] The HF DSC GMDSS Watch Receiver shall interface with an HF-ALE Transceiver (COR Section 440-2.8) to provide a GMDSS Distress Alerting Capability utilizing 2187.5, 4207.5, 6312, 8414.5, 12577 and 16804.5 KHz frequencies for transmitting Ownship HF-DSC alerts.
- 440-5.4.4 [RFP] The MF/HF DSC GMDSS Watch Receiver may share a common HF Receive Antenna with the HF Receivers (COR Section 440-4) and the MF NAVTEX Receiver (COR Section 440-2).

440-6 [RFP] Military Very High Frequency (VHF-FM) and VHF-AM Civil Aviation Transceiver Sub-System

- 440-6.1 [A009] A Military VHF-FM (Military-VHF) and Air Band VHF-AM Civil Aviation (AirBand-VHF) Transceiver sub-system shall be installed. The Military-VHF and AirBand-VHF requirements shall be met by a single transceiver; it is not a simultaneous capability requirement. The operator shall be capable of selecting the appropriate frequency and other modes of operation based on configuration programming conducted by Coast Guard technical support personnel. This shall be the same model transceiver, similarly optioned and collocated with the 225-399.99 MHz MILSATCOM/LOS-UHF Sub-System (COR Section 440-11) Transceivers. The transceiver shall provide the following capabilities:
 - 440-6.1.1 [RFP] RF output power shall be programmable by channel up to 100 Watts RMS.
 - 440-6.1.2 [RFP] The Military-VHF capability shall provide both SECRET and clear voice and data communication between the FRC-B and other ships, boats, forces, and/or aircraft operating in the frequency range of 30 – 88 MHz. This capability shall include:
 - 440-6.1.2.1 [A010] NSA certified Type-1 encryption capabilities through embedded emulation of the ANDVT, KY-58 and KG-84 devices.
 - 440-6.1.2.2 [RFP] Single Channel Ground and Airborne Radio System (SINGARS) software waveform and Electronic Counter-Counter-Measure (ECCM) capabilities.
 - 440-6.1.3 [RFP] The AirBand-VHF capability shall provide clear voice two-way AM communication between the FRC-B and aircraft operating in the frequency range of 118 MHz to 137 MHz.
- 440-6.2 [RFP] The Military-VHF / AirBand-VHF Transceivers shall be controllable through Remote Control Head(s). This shall include the ability to enter into SECRET (encrypted) or UNCLASSIFIED (unencrypted) modes from the remote location.
- 440-6.3 [A010] The Military-VHF / AirBand-VHF Transceiver shall use a Remote Control Head that is the same model as the Remote Control Heads used with the MILSATCOM/LOS-UHF Sub-System (COR Section 440-11) Transceivers. To minimize operator training and logistics impacts, it shall be an interchangeable Remote Control Head.

- 440-6.4 [RFP] To support ease of maintenance, if the Military-VHF / AirBand-VHF Transceiver does not have front panel control and display capabilities, a Remote Control Head shall be installed near the transceiver in the Electronics Equipment Space.
- 440-6.5 [RFP] The Remote Control Head shall be installed in the Pilot House in a location protected from rain and sea spray.
- 440-6.5.1 [RFP] The Remote Control Heads shall be one of the interfaces used to program and configure the Military-VHF / AirBand-VHF Transceiver. This shall include the capability for the operator to input and edit frequency/mode-channel assignments.
- 440-6.5.2 [RFP] Each Remote Control Head shall include a handset for local use in the SECRET (encrypted) or CLEAR (unencrypted) voice modes for use in the event of a casualty of the SVSS.
- 440-6.5.3 [RFP] Each Military-VHF / AirBand-VHF Transceiver shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter (wideband, narrowband, etc) control. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one Voice Radio Circuit shall be assigned to any given ROP or RSP at a time. Assigned ROPs shall control the Military-VHF / AirBand-VHF Transceiver's encryption mode through the SVSS.
- 440-6.5.3.1 [RFP] The interface between the transceiver and SVSS shall ensure that the ROPs are capable of selecting between the CIPHER and PLAIN modes.
- 440-6.5.3.1.1 [RFP] The SVSS shall acknowledge the first user to depress the Push-To-Talk (PTT) and disable the PTT function for all other users until the PTT is released. The only transmit audio shall be that of the acknowledged first user to depress the PTT. All other users shall be able to hear transmit and receive audio from the connected VRC. CIPHER/PLAIN selection shall be inhibited while the PTT is depressed.
- 440-6.5.3.1.2 [RFP] An ROP shall not be capable of shifting from PLAIN to CIPHER or CIPHER to PLAIN while the Push-To-Talk (PTT) is enabled on any ROP on the circuit.
- 440-6.5.3.2 [RFP] The Military-VHF / AirBand-VHF Transceiver shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the encryption mode. This indication shall identify that the transceiver is in the CIPHER or PLAIN mode.
- 440-6.5.3.3 [RFP] The transceiver's interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected when in the CIPHER mode.
- 440-6.6 [A010] Either a single antenna (preferred) or individual antennas for the Military-VHF band and the AirBand-VHF band shall be provided. If 2 antennas are used, an automatic RF switching device shall be provided to switch the radio/amplifier

RF output to the appropriate antenna. The transceiver or external power amplifier shall see a VSWR of less than 3.5:1.

- 440-6.7 [RFP] Time synchronization to support SINGARS and other ECCM frequency hopping capabilities shall be provided by DGPS through the Digital Data Switchboard (COR SECTION 413).

440-7 [RFP] Tactical Very High Frequency (Tactical-VHF) Transceiver Sub-System

- 440-7.1 [RFP] A Tactical-VHF Transceiver sub-system shall consist of 2 Motorola XTL-5000 VHF-FM transceivers, antennas and associated equipment to provide the capability to simultaneously communicate between the FRC-B and other ships, boats, forces, or aircraft operating in the frequency range of 136 MHz to 174 MHz in both 25 KHz Wideband and 12.5 KHz Narrowband modes.

- 440-7.1.1 [A009] The Motorola XTL-5000 VHF transceivers shall be configured as required in the table below:

Table 440-2

Motorola XTL-5000 Required Options	
Option	Motorola Part Number
XTL 5000 VHF MOBILE 10-50 WATT 136-174 MHZ, 010	MS20KSS9PW1_N
05 DIGITAL CONTROL HEAD HARDWARE	
05 DIGITAL CONTROL HEAD SOFTWARE	
REMOTE MOUNT	
PALM MICROPHONE	W22
DELETE ANTENNA	G89
AUXILARY SPEAKER 5 WATT	B18
APCO 25 DIGITAL COMMON AIR INTERFACE	G806
CONVENTIONAL SYSTEM OPERATION	G48
DIGITAL ID DISPLAY	G114
CONVENTIONAL VOTING SCAN INTERFACE	G387
ENCRYPTION UCM HARDWARE	G159
P25 AND MDC OTAR	G298
AES WITH DES-XL AND DES-OFB ENCRYPTION	G851

- 440-7.2 [RFP] Each Tactical-VHF Transceiver shall be mounted in a manner that will provide the technician with easy access to load both the frequency/channel assignments (Code Plug) at the back of transceiver and the Encryption Keys at

the front of the transceiver. A Digital Remote Control Head shall be provided for each Tactical-VHF Transceiver in the Electronics Equipment Space to facilitate maintenance and programming.

- 440-7.3 [A009] Each Tactical-VHF Transceiver shall include 2 Motorola XTL model 05 Digital Remote Control Heads per radio, one of each on opposite sides (port/starboard) of the Pilothouse.
- 440-7.3.1 [RFP] Each Digital Remote Control Head shall be clearly labeled "Tactical-VHF #1" and "Tactical-VHF #2" accordingly.
- 440-7.3.2 [RFP] Each Digital Remote Control Head shall be flush mounted in the pilothouse console and shall be placed in a logical relationship with the other Tactical-VHF and Tactical-UHF Remote Control Heads.
- 440-7.3.3 [RFP] Each Digital Remote Control Head shall include a noise-canceling microphone.
- 440-7.3.4 [RFP] If an Open Bridge is provided, an additional Digital Remote Control Head shall be provided for each Tactical VHF Transceiver. The Digital Remote Control Head shall be mounted in an environmentally protected enclosure, include a water resistant noise-canceling microphone and water-proof speaker.
- 440-7.4 [RFP] Each Tactical-VHF Transceiver shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter control. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one Voice Radio Circuit shall be assigned to any given ROP or RSP at a time.
- 440-7.4.1 [RFP] The Tactical-VHF Transceivers shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the encryption mode. This indication shall identify that the transceiver is in the PROTECTED or CLEAR mode.
- 440-7.4.2 [RFP] The transceivers' interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected.
- 440-7.5 [RFP] Each Tactical-VHF Transceiver shall have a dedicated speaker that is clearly audible from the interior of the pilothouse during all operating conditions. Each speaker shall be clearly labeled "Tactical-VHF #1" and "Tactical-VHF #2" accordingly.
- 440-7.6 [RFP] Each Tactical-VHF Transceiver shall provide both Transmitted and Received audio to the Digital Voice Logger. The audio level shall be independent of the user adjustable volume.
- 440-7.7 [RFP] The Tactical-VHF Transceiver shall have the following properties:
- 440-7.7.1 [RFP] Over the Air Re-Keying (OTAR) compatible and interoperable with the Coast Guard's Rescue-21 Infrastructure based on Motorola radio systems.
- 440-7.7.2 [RFP] Multi-key format options with the ability to hold a minimum of 32 separate encryption keys.
- 440-7.7.3 [RFP] Enabled to operate with Sensitive But Unclassified (SBU) encrypted communications in the AES, DES-CFB, and DES-OFB modes.

- 440-7.7.4 [RFP] APCO-25 compliant.
- 440-7.7.5 [RFP] Code-Plug programmable from 10 to 50 Watts.
- 440-7.8 [A009] The following shall be provided with each FRC-B for the Tactical-VHF sub-system (for a total of two complete keyloading systems for both the Tactical UHF sub-system and the Tactical UHF sub-system (COR Section 440-12):
 - 440-7.8.1 [RFP] Encryption-Key Loading Device, with Battery. 1 each.
 - 440-7.8.2 [RFP] Spare Encryption-Key Loading Device Battery. 1 each.
 - 440-7.8.3 [RFP] Encryption-Key Loading Device Battery Charger. 1 each.
 - 440-7.8.4 [RFP] Encryption-Key Loading Cable. 1 each.
 - 440-7.8.5 [RFP] Code Plug Loading Cable. 1 each
 - 440-7.8.6 [RFP] CD ROM Service Manual. 1 each.
 - 440-7.8.7 [RFP] CD ROM User's Manual. 1 each.
- 440-7.9 [RFP] The Tactical-VHF Transceiver shall have the following Marine Band channels programmed upon delivery:
 - 440-7.9.1 [RFP] Channel 13; 156.650 MHz (Name: "MM 13")
 - 440-7.9.2 [RFP] Channel 16; 156.800 MHz (Name: "MM 16")
 - 440-7.9.3 [RFP] Channel 21A; 157.050 MHz (Name: "MM 21")
 - 440-7.9.4 [RFP] Channel 22A; 157.100 MHz (Name: "MM 22")
 - 440-7.9.5 [RFP] Channel 23A; 157.150 MHz (Name: "MM 23")
 - 440-7.9.6 [RFP] Channel 81A; 157.075 MHz (Name: "MM 81")
 - 440-7.9.7 [RFP] Channel 83A; 157.175 MHz (Name: "MM 83")
- 440-7.10 [RFP] The Tactical-VHF Transceiver antennas shall be marinized dipole antennas with mounting hardware that is electrically isolated from the transmission line. The antenna shall have a maximum VSWR of less than 2:1 across the 136-174 MHz operating spectrum (such as the Shakespeare BA-1012-0 or Shakespeare HS 2774-1).

440-8 [RFP] Marine Band Very High Frequency / Digital Selective Calling (MarineBand-VHF/DSC) Transceiver Sub-System

- 440-8.1 [RFP] A Marine Band VHF-FM Digital Selective Calling (DSC) Class-A compliant radio shall be provided. The Marine Band VHF/DSC transceiver shall be compliant to International Telecommunications Union – Recommendation (ITU-R) M.492-11, shall be Type Accepted by the FCC for Global Maritime Distress and Safety System (GMDSS) compliance, and shall be labeled by the manufacturer in accordance with FCC rules.
- 440-8.2 [RFP] This radio shall operate across the frequency range of 156.050 – 163.775 MHz and shall meet the following requirements:
 - 440-8.2.1 [RFP] The radio shall be capable of simultaneously and constantly monitoring VHF-FM Marine Channel 70 (156.525 MHz) DSC data transmissions while transmitting on marine band channels other than Channel 70 with this radio or other radio circuits.

- 440-8.2.2 [RFP] Keyboard: The radio shall be equipped with a backlit Alpha-Numeric keypad for direct channel entry and control of radio functions and MMSI numbers. The backlit keys shall be adjustable from full intensity to no light (turned off) to minimize the impacts to the crew's night vision.
- 440-8.2.3 [RFP] Display: The radio shall have a minimum of a 4-Line Display to include: Latitude & Longitude of DSC Distress Call, Nature of DSC Distress Call, MMSI of DSC Distress Call, and Date & Time of DSC Distress Call.
- 440-8.2.4 [RFP] Speaker: The radio shall have a dedicated water resistant speaker that is clearly audible from the helm during all operating conditions. The speaker shall be clearly labeled "Marine VHF DSC Radio."
- 440-8.2.5 [RFP] Transceiver Environmental Protection: The minimum level of environmental protection for the VHF DSC Class-A Transceiver shall comply with IEC Publication [529 IPX-4](#). The radio shall be installed in a location that will minimize the exposure to spray and mist.
- 440-8.3 [RFP] The Marine Band-VHF DSC Class-A Radio shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter control. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one Voice Radio Circuit shall be assigned to any given ROP or RSP at a time.
- 440-8.3.1 [RFP] The radio's interface with the SVSS shall provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected.
- 440-8.4 [RFP] The Marine Band-VHF DSC Class-A Radio shall be capable of:
- 440-8.4.1 [RFP] Transmitting & Receiving analog voice and digital DSC data.
- 440-8.4.2 [RFP] Allowing the operator to select an output power between 25 Watts in High-Power and 1 Watt in Low Power.
- 440-8.4.3 [RFP] Manually transmitting a DSC Digital Distress Call from the Distress Key.
- 440-8.4.4 [RFP] Manually transmitting a DSC Digital Distress Call with Nature of Distress information.
- 440-8.4.5 [RFP] Receiving a DSC Digital Distress Call.
- 440-8.4.6 [RFP] Manually transmitting a DSC Digital Distress Call Acknowledgement..
- 440-8.4.7 [RFP] Receiving a DSC Digital Distress Call Acknowledgement.
- 440-8.4.8 [RFP] Manually transmitting a DSC Digital Distress Relay.
- 440-8.4.9 [RFP] Receiving a DSC Digital Distress Relay.
- 440-8.4.10 [RFP] Receiving a DSC Digital Distress Relay Acknowledgement.
- 440-8.4.11 [RFP] Canceling an Ownship false DSC Digital Distress Alert.
- 440-8.4.12 [RFP] Configuring the system for a Power-Up Default Mode where automatic acknowledgements or responses of any call are disabled.
- 440-8.4.13 [RFP] Receiving Ownship position information from the Digital Data Switchboard (COR SECTION 413) in [NMEA-0183](#), version 2.1 or later format, for transmitting Ownship location.

- 440-8.4.14 [RFP] Outputting at least one of the following NMEA-0183 messages whenever a DSC Distress Message, Position Poll Response or Position Broadcast is received: DSE (Digital Selective Calling - Extended), DSC (Digital Selective Calling), or TLL (Target Lat/Long). These message formats are provided in priority order, with DSE the preferred format. This data shall be provided to Digital Data Switchboard (COR SECTION 413) for distribution to the Low-Power Radar Chart Plotter, the X-Band Radar, and the Navigation Terminal Server #1 for use by the Shipboard Command & Control System (SCCS) and other computer based systems.
- 440-8.5 [RFP] If an Open Bridge is provided, a VHF DSC Class-A Radio Remote Control Head shall be installed. The Remote Control Head shall meet the following requirements:
- 440-8.5.1 [RFP] Environmental Protection: The Remote Control Head shall, at a minimum, comply with [IEC Publication 60529 IPX-7](#).
- 440-8.5.2 [RFP] Keypad: Shall have an Alpha-Numeric keypad for direct channel entry and control of radio functions. The backlit keys shall be adjustable to no light (turned off) to minimize the impacts to the crew's night vision.
- 440-8.5.3 [RFP] Display: Shall have a minimum of a 4-Line Display to include: Lat/Long of Distress Call, Nature of Distress Call, MMSI of Distress Call, Date/Time of Distress Call.
- 440-8.5.4 [RFP] Speaker: Shall have a dedicated water resistant speaker that is clearly audible from the Flying Bridge during all operating conditions. The speaker shall be clearly labeled "Marine VHF DSC Radio."
- 440-8.5.5 [RFP] The Operator shall be able to perform all of the VHF DSC Class-A Radio functions through this Remote Control Head.
- 440-9 [RFP] Marine Band Very High Frequency Channel 13 and Channel 16 Guard Receiver Sub-System**
- 440-9.1 [RFP] A VHF-FM Channel 13 (156.650 MHz) Guard Receive capability shall be provided and installed in the Electronic Equipment Space.
- 440-9.2 [RFP] A VHF-FM Channel 16 (156.800 MHz) Guard Receive capability shall be provided and installed in the Electronic Equipment Space.
- 440-9.3 [RFP] The Channel 13 and Channel 16 Guard Receivers shall interface with the SVSS (COR Section 440-20.2).
- 440-9.3.1 [RFP] The receivers' interfaces with the SVSS shall provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected.
- 440-10 [RFP] Very High Frequency (VHF) Handheld Transceiver Sub-System**
- 440-10.1 [A009] Handheld Tactical-VHF/UHF transceivers shall be provided to the FRC-B by the Government after delivery. The Contractor shall provide weight, power, and space considerations in the Electronics Equipment space for additional VHF equipment as follows:

Table 440-3

Type / Qty.	Size (mm) each	Weight (kg) each	Power Requirement
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Two (2) Six-Bay Handheld Chargers	650 x 400 x 450	2	120VAC
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440-10.1.1 [RFP] The charging banks shall be installed in the Electronics Equipment Space in a location easily accessible by crew members.

440-11 [RFP] Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) and Line Of Sight (LOS) Transceiver Sub-System

440-11.1 [RFP] A MILSATCOM/LOS-UHF sub-system shall be installed consisting of 2 transceivers capable of operating in the frequency range of 225 MHz to 399.99 MHz for UHF Military SATCOM and LOS communications. The operator shall be capable of selecting the appropriate frequency and other modes of operation based on configuration programming conducted by Coast Guard technical support personnel. This shall be the same model transceiver, similarly optioned and collocated with the Military-VHF / AirBand-VHF Sub-System (COR Section 440-6). The transceivers, remote control heads, amplifiers and antennas shall provide the following capabilities:

440-11.1.1 [RFP] RF output power shall be programmable by channel up to 100 Watts RMS.

440-11.1.2 [RFP] The MILSATCOM/LOS-UHF capability shall provide both SECRET and clear voice and data communication between the FRC-B and other ships, boats, forces, and/or aircraft with compatible systems.

440-11.1.3 [RFP] The MILSATCOM/LOS-UHF Transceivers shall provide NSA certified Type-1 encryption capabilities through embedded emulation of the ANDVT, KY-58, KG-84C, and KGV-11C devices.

440-11.1.4 [RFP] The MILSATCOM/LOS-UHF Transceivers shall provide the HAVEQUICK and HAVEQUICK-II software waveform and provide Electronic Counter-Counter-Measure (ECCM) capabilities.

440-11.1.5 [A013] The MILSATCOM/LOS-UHF Transceivers shall be capable of operating with the Ultra High Frequency (UHF) Satellite Communications (SATCOM) Integrated Waveform (IW).

440-11.2 [RFP] The MILSATCOM/LOS-UHF Transceivers shall be controllable through Remote Control Head(s). This shall include the ability to enter into SECRET (encrypted) or UNCLASSIFIED (unencrypted) modes from the remote location.

440-11.2.1 [RFP] The MILSATCOM/LOS-UHF Transceiver shall use Remote Control Heads that are the same model as the Remote Control Head used with the Military-VHF / AirBand-VHF Sub-System (COR Section 440-6) Transceivers. To minimize operator and logistics impacts, it shall be an interchangeable Remote Control Head.

440-11.3 [A010] The MILSATCOM/LOS-UHF Transceivers shall provide NSA certified Type-1 encryption capabilities through embedded emulation of the ANDVT, KY-58, KG-84, and KGV-11C devices.

440-11.4 [RFP] The MILSATCOM/LOS-UHF sub-system shall be capable of a transmission rate up to 16 Kbps for UHF 25KHz Single Access Dedicated MILSATCOM communications link.

- 440-11.5 [RFP] The MILSATCOM/LOS-UHF sub-system shall be capable of a transmission rate up to 2.4 Kbps for UHF 5KHz Single Access Dedicated MILSATCOM communications links.
- 440-11.6 [RFP] To support ease of maintenance, if the MILSATCOM/LOS-UHF Transceivers do not have front panel control and display capabilities, a Remote Control Head shall be installed near the transceiver in the Electronics Equipment Space.
- 440-11.7 [RFP] The Remote Control Head shall be installed in the Pilot House in a location protected from rain and sea spray.
- 440-11.7.1 [RFP] The Remote Control Heads shall be one of the interfaces used to program and configure the MILSATCOM/LOS-UHF Transceivers. This shall include the capability for the operator to input and edit frequency/mode-channel assignments.
- 440-11.7.2 [RFP] Each Remote Control Head shall include a handset for local use in the SECRET (encrypted) or CLEAR (unencrypted) voice modes for use in the event of a casualty of the SVSS (COR Section 440-20.2).
- 440-11.8 [RFP] Each MILSATCOM/LOS-UHF Transceiver shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter (wideband, narrowband, etc) control. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one Voice Radio Circuit shall be assigned to any given ROP or RSP at a time. Assigned ROPs shall control the MILSATCOM/LOS-UHF Transceiver's encryption mode through the SVSS.
- 440-11.8.1 [RFP] The interface between the transceiver and SVSS shall ensure that the ROPs are capable of selecting between the CIPHER and PLAIN modes.
- 440-11.8.1.1 [RFP] The SVSS shall acknowledge the first user to depress the Push-To-Talk (PTT) and disable the PTT function for all other users until the PTT is released. The only transmit audio shall be that of the acknowledged first user to depress the PTT. All other users shall be able to hear transmit and receive audio from the connected VRC. CIPHER/PLAIN selection shall be inhibited while the PTT is depressed.
- 440-11.8.1.2 [RFP] An ROP shall not be capable of shifting from PLAIN to CIPHER or CIPHER to PLAIN while the Push-To-Talk (PTT) is enabled on any ROP on the circuit.
- 440-11.8.2 [RFP] The MILSATCOM/LOS-UHF Transceiver shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the encryption mode. This indication shall identify that the transceiver is in the CIPHER or PLAIN mode.
- 440-11.8.3 [RFP] The transceiver's interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected when in the CIPHER mode.
- 440-11.8.4 [RFP] A single azimuth stabilized MILSATCOM antenna shall be installed in a location to provide optimal satellite connectivity. The antenna shall access and actively track pre-defined satellites in various orbits. It shall include a Remote Control Unit with stored satellite position data allowing for easy

programming and automatic pointing calculation by the crew. The antenna shall receive navigation sensor data required to support antenna aiming from the applicable sensor through the Digital Data Switchboard (COR SECTION 413). The antenna shall meet, the following minimum performance requirements:

Table 440-4

Frequency:	240-320 MHz
Polarization:	Right Hand Circular
Gain:	+10 dBic
VSWR:	1.5:1
Beamwidth:	75°
RF Power:	200 Watts
Point Accuracy:	3°
Azimuth:	360° continuous, stabilized
Stabilization:	Automatic, using ship's heading
Elevation:	0° to +90° remotely settable
Slew Rate:	Azimuth: 50°/sec max heading rate Elevation: 25°/sec max

440-11.8.5 [A010] A marinized UHF LOS antenna shall be provided on the mast that shall have a maximum VSWR of less than 2.5:1 across the 225-399.99 MHz operating spectrum.

440-11.9 [RFP] Time synchronization to support HAVEQUICK/HAVEQUICK-II and other ECCM frequency hopping capabilities shall be provided by DGPS through the Digital Data Switchboard (COR SECTION 413).

440-12 [RFP] Tactical Ultra High Frequency (Tactical-UHF) Transceiver Sub-System

440-12.1 [A009] A Tactical-UHF Transceiver sub-system shall consist of 2 Motorola XTL-5000 UHF transceivers, antennas and associated equipment to provide the capability to simultaneously communicate between the FRC-B and other ships, boats, forces, and/or aircraft operating in the frequency range of 380-420 MHz in both 25 KHz Wideband and 12.5 KHz Narrowband modes.

440-12.1.1 [A009] The Motorola XTL-5000 UHF transceivers shall be configured as required in the table below:

Table 440-4.1

Motorola 380-420 MHz UHF XTL-5000 Required Options	
<i>Option</i>	<i>Motorola Part #</i>
XTL 5000 UHF MOBILE 10-40 WATT 380-470 MHZ	M20QSS9PW1_N
XTL 5000 O5 CONTROL HEAD	G442

CONTROL HEAD SOFTWARE	G444
REMOTE MOUNT	G67
PALM MICROPHONE	W22
NO ANTENNA NEEDED	G89
AUXILARY SPEAKER 5 WATT	B18
SOFTWARE ASTRO DIGITAL COMMON AIR INTERFACE OPERATION	G806
SMARTZONE OPERATION	G51
DIGITAL ID DISPLAY	G114
CONVENTIONAL VOTING SCAN INTERFACE	G387
RS232 PACKET DATA INTERFACE OPTION	W947
ENCRYPTION UCM HARDWARE	G159
P25 AND MDC OTAR	G298
AES WITH DES-XL AND DES-OFB ENCRYPTION	G851
DATA INTERFACE CABLE TRUNK MOUNT	G304
ASTRO PROJECT 25 TRUNKING SOFTWARE	G361

440-12.2 [RFP] Each Tactical-UHF Transceiver shall be mounted in a manner that will provide the technician with easy access to load the frequency/channel assignments (e.g. Code Plug - back of transceiver) and the Encryption Keys (front of the transceiver). A Digital Remote Control Head shall be provided for each Tactical-UHF Transceiver in the Electronics Equipment Space to facilitate maintenance and programming.

440-12.3 [A009] Each Tactical-UHF Transceiver shall include 2 Model 05 Digital Remote Control Heads per transceiver, one of each on opposite sides of the Pilothouse.

440-12.3.1 [RFP] Each Digital Remote Control Head shall be clearly labeled "Tactical-UHF #1" and "Tactical-UHF #2" accordingly.

440-12.3.2 [RFP] Each Digital Remote Control Head shall be flush mounted in the pilothouse console and shall be placed in a logical relationship with the other Tactical-UHF and Tactical-UHF Remote Control Heads.

440-12.3.3 [RFP] Each Digital Remote Control Head shall include a noise-canceling microphone.

440-12.3.4 [RFP] If an Open Bridge is provided, an additional Digital Remote Control Head shall be provided for each Tactical-UHF Transceiver. The Digital Remote Control Head shall be mounted in an environmentally protected enclosure and include a water resistant noise-canceling microphone and water-proof speaker.

440-12.4 [RFP] Each Tactical-UHF Transceiver shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter (wideband, narrowband, etc) control. Distributed Remote Operator Positions

(ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC); however, only one Voice Radio Circuit shall be assigned to any given ROP or RSP at a time.

- 440-12.4.1 [RFP] The Tactical-UHF Transceivers shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the encryption mode. This indication shall identify that the transceiver is in the PROTECTED or CLEAR mode.
- 440-12.4.2 [RFP] The transceivers' interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected.
- 440-12.5 [RFP] Each Tactical-UHF Transceiver shall have a dedicated speaker that is clearly audible from the interior of the pilothouse during all operating conditions. Each speaker shall be clearly labeled "Tactical-UHF #1" and "Tactical-UHF #2" accordingly.
- 440-12.6 [RFP] Each Tactical-UHF Transceiver shall provide both Transmitted and Received audio to the Digital Voice Logger. The audio level shall be independent of the user adjustable volume.
- 440-12.7 [RFP] The Tactical-UHF Transceiver shall have the following properties:
 - 440-12.7.1 [RFP] Trunking enabled. Fully interoperable with the DOD Enterprise Land Mobile Radio (ELMR) Force-Protection/Anti-Terrorism Transceiver network based on Motorola XTL-5000 Tactical-UHF Transceivers and employed on Navy and Coast Guard vessels.
 - 440-12.7.2 [RFP] Over the Air Re-Keying (OTAR) compatible and interoperable with the Coast Guard's Rescue-21 Infrastructure based on Motorola radio systems.
 - 440-12.7.3 [RFP] Multi-key format options. Shall be able to hold a minimum of 32 separate encryption keys.
 - 440-12.7.4 [RFP] Enabled to operate with Sensitive But Unclassified (SBU) encrypted communications in the AES, DES-CFB, and DES-OFB modes.
 - 440-12.7.5 [RFP] APCO-25 compliant.
 - 440-12.7.6 [RFP] Code-Plug programmable output power from 10 to 50 Watts.
 - 440-12.7.7 [RFP] RS232 Packet Data Interface enabled.
- 440-12.8 [A009] The following shall be provided with each FRC-B for the Tactical-UHF sub-system (for a total of two complete keyloading systems for both the Tactical UHF sub-system and the Tactical VHF sub-system (COR Section 440-7)):
 - 440-12.8.1 [RFP] Encryption-Key Loading Device, with Battery. 1 each.
 - 440-12.8.2 [RFP] Spare Encryption-Key Loading Device Battery. 1 each.
 - 440-12.8.3 [RFP] Encryption-Key Loading Device Battery Charger. 1 each.
 - 440-12.8.4 [RFP] Encryption-Key Loading Cable. 1 each.
 - 440-12.8.5 [RFP] Code Plug Loading Cable. 1 each
 - 440-12.8.6 [RFP] CD ROM Service Manual. 1 each.
 - 440-12.8.7 [RFP] CD ROM User's Manual. 1 each.

440-12.9 [RFP] The Tactical-UHF Transceiver shall have the following UHF channels/frequencies programmed upon delivery:

440-12.9.1 [RFP] USCG Channel 1: 412.9750 MHz

440-12.9.2 [RFP] USCG Channel 2: 411.7875 MHz

440-12.9.3 [RFP] USCG Channel 3: 413.0250 MHz

440-12.10 [RFP] Each Tactical-UHF antenna shall be a marinized dipole antenna with mounting hardware that is electrically isolated from the transmission line. Each antenna shall have a maximum VSWR of less than 2:1 across the 380-420 MHz operating spectrum.

440-13 [RFP] Public Safety Ultra High Frequency (PublicSafety-UHF) Transceiver Sub-System

440-13.1 [RFP] A PublicSafety-UHF Transceiver sub-system shall consist of 1 UHF transceiver, antennas and associated equipment to provide the capability to simultaneously communicate between the FRC-B and other ships, boats, forces, and/or aircraft operating in the frequency range of 764-870 MHz in both 25 KHz Wideband and 12.5 KHz Narrowband modes.

440-13.1.1 [RFP] This radio is required to support interoperability where Public Safety organizations do not interoperate on designated VHF (136-174 MHz) and UHF (406-420 MHz) Federal Interoperability Frequencies.

440-13.1.2 [RFP] The Coast Guard has no frequency allocations in the 764-870 MHz band. The most effective and efficient implementation to support interoperability requirements with shore-based Public Safety organizations is to bridge existing Coast Guard enterprise communications infrastructure system.

440-13.2 [RFP] The PublicSafety-UHF Transceiver shall be mounted in a manner that will provide the technician with easy access to load the frequency/channel assignments (e.g. Code Plug - back of transceiver) and the Encryption Keys (front of the transceiver). A Digital Remote Control Head shall be provided in the Electronics Equipment Space to facilitate maintenance and programming.

440-13.3 [RFP] The PublicSafety-UHF Transceiver shall include a Digital Remote Control Head in the Pilothouse.

440-13.3.1 [RFP] The Digital Remote Control Head shall be clearly labeled "PublicSafety-UHF".

440-13.3.2 [RFP] The Digital Remote Control Head shall include a noise-canceling microphone.

440-13.3.3 [RFP] If an Open Bridge is provided, an additional Digital Remote Control Head shall be provided. The Digital Remote Control Head shall be mounted in an environmentally protected enclosure and include a water resistant noise-canceling microphone and water-proof speaker.

440-13.4 [RFP] Each PublicSafety-UHF Transceiver shall interface with the SVSS (COR Section 440-20.2) for audio patching and frequency and operating parameter (wideband, narrowband, etc) control. Distributed Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs) shall be assigned by the SVSS. Multiple ROPs and RSPs may be assigned to any Voice Radio Circuit (VRC);

however, only one Voice Radio Circuit shall be assigned to any given ROP or RSP at a time.

- 440-13.4.1 [RFP] The PublicSafety-UHF Transceiver shall interface with the SVSS to provide assigned ROPs a visual indication of the status of the encryption mode. This indication shall identify that the transceiver is in the PROTECTED or CLEAR mode.
- 440-13.4.2 [RFP] The transceiver's interface with the SVSS shall also provide a DETECT signal to be used to provide a visual indication on the ROPs and RSPs to the operator that intelligent audio has been detected.
- 440-13.5 [RFP] The PublicSafety-UHF Transceiver shall have a dedicated speaker that is clearly audible from the interior of the pilothouse during all operating conditions. The speaker shall be clearly labeled "PublicSafety-UHF".
- 440-13.6 [RFP] The PublicSafety-UHF Transceiver shall provide both Transmitted and Received audio to the Digital Voice Logger. The audio level shall be independent of the user adjustable volume.
- 440-13.7 [RFP] The PublicSafety-UHF Radio shall have the following properties:
 - 440-13.7.1 [RFP] Trunking enabled.
 - 440-13.7.2 [RFP] Over the Air Re-Keying (OTAR).
 - 440-13.7.3 [RFP] Enabled to operate with Sensitive But Unclassified (SBU) encrypted communications in the AES, DES-CFB, and DES-OFB modes.
 - 440-13.7.3.1 [RFP] Multi-key format options. Shall be able to hold a minimum of 32 separate encryption keys.
 - 440-13.7.4 [RFP] APCO-25 compliant.
 - 440-13.7.5 [RFP] Code-Plug programmable output power from 10 to 50 Watts.
- 440-13.8 [A009] If the Public Safety-UHF transceiver model is different than the Tactical-VHF (COR Section 440-7) and Tactical-UHF (440-12) transceiver models, the following shall be provided with each FRC-B:
 - 440-13.8.1 [RFP] Encryption-Key Loading Device. 1 each.
 - 440-13.8.2 [RFP] Encryption-Key Loading Cable. 1 each.
 - 440-13.8.3 [RFP] Code Plug Loading Cable. 1 each.
 - 440-13.8.4 [RFP] CD ROM Service Manual. 1 each.
 - 440-13.8.5 [RFP] CD ROM User's Manual. 1 each.
- 440-13.9 [A010] The PublicSafety-UHF antenna shall be a marinized dipole antenna with mounting hardware that is electrically isolated from the transmission line. The antenna shall have a maximum VSWR of less than 2:1 across the 764-870 MHz operating spectrum.

440-14 [RFP] Cellular Telephones

- 440-14.1 [RFP] Two cellular telephone systems shall be installed, each consisting of:
 - 440-14.1.1 [RFP] A marine cellular telephone antenna and associated wiring to connect the antenna to the cellular telephone.

440-14.1.2 [A009] An NSA Approved Type 1 secure voice ruggedized transportable cellular telephone.

440-14.1.3 [A009] The interface connection used to connect the cellular phones and installed antenna to the SVSS shall be mounted in the pilothouse.

440-14.2 [A010] Both cellular telephones shall interface with the Commercial Telephone System (COR Section 432-2).

440-15 [RFP] Commercial Satellite Telephone Sub-System

440-15.1 [RFP] An INMARSAT Mini-M Service Telephone System shall be installed.

440-15.1.1 [RFP] The Mini-M Service System shall be enabled and a connection shall be provided to allow transmitting and receiving voice communications in STU-III mode.

440-15.1.2 [RFP] The Mini-M system shall interface with the SVSS (COR Section 440-20.2).

440-15.1.3 [RFP] The Mini-M Service System shall provide the capability for transmitting in the L-band frequency ranges 1525-1559 MHz and 1626.5-1660.5 MHz.

440-15.1.4 [RFP] The Mini-M Service System shall provide a data communications link capable of a data rate of up to 2.4 Kbps, bidirectional.

440-16 [RFP] Commercial Satellite Mobile Integrated Services Digital Network (ISDN) and Mobile Packet Data Service (MPDS)

440-16.1 [RFP] A fully enabled INMARSAT-F77+ Service system shall be installed.

440-16.1.1 [RFP] The INMARSAT-F77+ Service system shall provide a capability for protected and secure communication links over INMARSAT Satellite Network Service for transmitting/receiving IP data.

440-16.1.2 [RFP] The INMARSAT-F77+ Service Telephone system shall provide a link availability of 99% for INMARSAT-Fleet service, under clear sky conditions, and at elevation angles greater than 5° relative to the horizon.

440-16.1.3 [RFP] The system shall provide a minimum effective throughput of 128 Kbps over the INMARSAT F77+.

440-16.1.4 [RFP] If required, the INMARSAT F77+ shall obtain ship's heading and other positional information from the Digital Data Switchboard, COR SECTION 413.

440-17 [RFP] Commercial Satellite Global Maritime Distress and Safety System (GMDSS) INMARSAT-C

440-17.1 [RFP] An INMARSAT-C Service system shall be installed.

440-17.1.1 [RFP] The INMARSAT-C Service System shall provide GMDSS Distress Alerting Capabilities utilizing the 1626.5-1645.5 MHz frequency range.

440-18 [RFP] Antenna Switch Matrix Sub-System

440-18.1 [A009] An Antenna Switch Matrix shall be provided to allow a technician or authorized user to make antenna assignments for radios where multiple supporting antennas will be installed. The transceivers or external power amplifiers shall see a VSWR of less than 2:1. Table 440-5 defines the allowable interconnections of the Antenna Switch Matrix.

Table 440-5

ANTENNA SWITCH MATRIX – INTERCONNECTION TABLE		
SUB-SYSTEM	TRANSCEIVER	ANTENNA
HF-ALE	HF-ALE Transceiver #1 HF-ALE Transceiver #2	HF-ALE Whip Antenna #1 HF-ALE Whip Antenna #2 Near-Vertical Incidence Skywave Antenna Dummy Load
Military/AirBand-VHF	Military-VHF/UHF #1 Military-VHF/UHF #2	Military-VHF (30-88 MHz)* AirBand-VHF (118-137 MHz)*
MILSATCOM/LOS-UHF	Military-VHF/UHF #3	Military-UHF LOS (225-399.99 MHz) Military-UHF SATCOM (240-320 MHz) Dummy Load
* An additional automatic switching capability shall exist between the Antenna Switch Matrix and the Military-VHF and AirBand-VHF antennas, if individual antennas are provided. This capability shall automatically switch between antennas based on the selected transceiver band. It shall support connectivity of VHF/UHF Transceivers #1-3.		

440-19 [RFP] Secure Communications Encryption Sub-System

- 440-19.1 [A009] Rack space, power connections, and weight consideration shall be provided for the following secure voice equipment (if embedded encryption is not included with the HF-ALE transceivers):

Table 440-6

Type / Qty	Size (mm) each	Weight (kg) each
Four KYV-5	123x155x75	2

- 440-19.2 [A010] Signal cabling for contractor furnished crypto devices shall be provided. Signal cabling for government installed equipment, post-delivery, will be provided by the Government.

440-20 [RFP] Secure Voice Switchboard

- 440-20.1 [RFP] A Secure Voice Switchboard System (SVSS) shall be provided to interface onboard Voice Radio Circuits (VRCs: transceivers and receivers) with Remote Operator Positions (ROPs) and Remote Speaker Positions (RSPs).
- 440-20.2 [RFP] The SVSS shall provide the capability to simultaneously interface with a minimum of 25 radio circuits and 6 telephone circuits. It shall be installed to interface with the following radios:
- 440-20.2.1 [RFP] Tactical-HFALE #1 (via ANDVT)
 - 440-20.2.2 [RFP] Tactical-HFALE #2 (via ANDVT)
 - 440-20.2.3 [RFP] HF-Receiver #1 (via ANDVT)
 - 440-20.2.4 [RFP] HF-Receiver #2 (via ANDVT)
 - 440-20.2.5 [RFP] Tactical-VHF #1
 - 440-20.2.6 [RFP] Tactical-VHF #2

- 440-20.2.7 [RFP] MarineBand-VHF/DSC
- 440-20.2.8 [RFP] Marine Band VHF-FM Channel 13 (156.650 MHz) Guard Receiver
- 440-20.2.9 [RFP] Marine Band VHF-FM Channel 16 (156.800 MHz) Guard Receiver
- 440-20.2.10 [RFP] Tactical-UHF #1
- 440-20.2.11 [RFP] Tactical-UHF #2
- 440-20.2.12 [RFP] Military-VHF/UHF #1
- 440-20.2.13 [RFP] Military-VHF/UHF #2
- 440-20.2.14 [RFP] Military-VHF/UHF #3
- 440-20.2.15 [RFP] PublicSafety-UHF
- 440-20.2.16 [RFP] Shipboard Cellular Telephone Systems
- 440-20.2.17 [RFP] INMARSAT Mini-M Telephone System
- 440-20.2.18 [RFP] Radio Direction Finder
- 440-20.3 [RFP] The SVSS shall provide the combined transmit/receive audio from each Voice Radio Circuit to the Digital Voice Logger (DVL), COR Section 440-21. The SVSS shall provide both audio and frequency information to the DVL for tagging.
- 440-20.4 [RFP] The SVSS shall be capable of bridging any 2 Voice Radio Circuits together. It shall be capable of maintaining a minimum of 2 of these circuits.
- 440-20.5 [RFP] The SVSS Voice Radio Circuit interfaces shall be identical; meaning, that the interface capabilities, properties and connectors shall be the same regardless of whether interfacing with a transceiver or receiver and shall be independent of the make, model and line levels of those radios. Specific VRC interface configuration changes and adjustments (i.e. radio input and output levels) shall be accomplished by an administrator (Electronics Technician Third Class) through an SVSS software configuration application.
- 440-20.6 [RFP] The SVSS shall be able to simultaneously route (1) combined transmitted and received audio from any transceiver, or (2) received audio from any receiver to any RSP(s) and/or ROP(s).
 - 440-20.6.1 [RFP] Each RSP/ROP shall provide a visual indication that it is connected to a Voice Radio Circuit.
 - 440-20.6.2 [RFP] Each RSP/ROP shall provide a visual indication when audio is being received or transmitted on the assigned Voice Radio Circuit.
 - 440-20.6.3 [RFP] The SVSS shall be able to simultaneously route any number of ROPs to a single Voice Radio Circuit. Each ROP shall be capable of transmitting and receiving voice audio on that Voice Radio Circuit.
 - 440-20.6.4 [A009] Each RSP volume shall be adjustable by the operator via a front panel control.
 - 440-20.6.5 [RFP] Each ROP shall include an internal or attached speaker. The speaker volume shall be adjustable by the operator via a front panel rotary knob. If this control also adjusts the headset volume, the ability to mute the speaker is required.
 - 440-20.6.6 [RFP] Each ROP shall be provided with the option to use either a Handset or Headset. The connector for each shall be the same and the handsets and

headsets shall be interchangeable. Operators shall be able to quickly and easily swap handsets/headsets through a front panel mounted connector. Use of a U229/U or U329/U bayonet connector is recommended.

- 440-20.6.6.1 [RFP] Handsets and Headsets shall include Noise Canceling Microphones.
- 440-20.6.6.2 [RFP] Headsets shall include Active Noise Reduction.
- 440-20.6.6.3 [RFP] Headsets shall be capable of being worn with helmets.
- 440-20.6.7 [RFP] Each ROP shall provide a visual indication that it is connected to a Voice Radio Circuit.
- 440-20.6.8 [RFP] Each ROP shall provide a visual indication when audio is being received or transmitted on the assigned Voice Radio Circuit.
- 440-20.6.9 [RFP] Each ROPs shall be capable of controlling whether Type-I encrypted circuits are CIPHER (Secure: Encrypted for SECRET) or PLAIN (Clear: Unencrypted for Unclassified). A visual indicator to show whether the circuit is in the CIPHER or PLAIN mode shall be visible to the operator on every ROP connected to that radio circuit.
- 440-20.6.10 [RFP] The SVSS shall acknowledge the first user to depress the Push-To-Talk (PTT) and disable the PTT function for all other users until the PTT is released. The only transmit audio shall be that of the acknowledged first user to depress the PTT. All other users shall be able to hear transmit and receive audio from the connected equipment trunk. CIPHER/PLAIN selection shall be inhibited while the PTT is depressed.
- 440-20.6.11 [RFP] An ROP shall not be capable of shifting from PLAIN to CIPHER or CIPHER to PLAIN while the Push-To-Talk (PTT) is enabled on any ROP on the circuit.
- 440-20.6.12 [RFP] Remote Operator Positions (ROPs) shall be provided in the following locations:

Table 440-7

Remote Operator Positions	
Location	Qty.
Pilot House	6
Mess Deck	1
CO's Cabin	1
XO's Stateroom	1
Electronic Equipment Space	1
Open Bridge (if provided)	1
Fantail	1
Cutter Boat Launch and Recovery Area	1

440-20.6.13 [RFP] Remote Speaker Positions (RSPs) shall be provided in the following locations:

Table 440-8

Remote Speaker Positions	
Location	Qty.
Pilot House	10
Mess Deck	1
Electronic Equipment Space	1
Open Bridge (if provided)	3
Fantail	1
Cutter Boat Launch and Recovery Area	1

440-20.7 [RFP] The SVSS shall be capable of creating, importing, editing, storing, exporting, and activating an SVSS Communications Plan consisting of RSP/ROP assignments, ROP matrix assignments, radio frequency assignments, and other radio mode assignments such as Bandwidth (12.5/25.0 KHz).

440-20.7.1 [RFP] The configuration of the SVSS shall be configurable by ship's force personnel with administrator privileges (Administrator) through SVSS management application software installed on a computer in the Electronics Equipment Space.

440-20.7.1.1 [A009] The SVSS management application software shall provide the Administrator the capability to make configuration changes via point and click operations. Interactive graphical circuit diagrams shall be used to represent and implement configuration changes. Each transceiver, receiver, encryption device, Remote Speaker Position, and Remote Operator Position shall be represented by a color graphic icon. Making connectivity changes shall be accomplished drag-&-dropping icons or through the use of pull-down menus on the interactive graphical circuit diagrams. System faults shall be represented on the graphical display to alert the Administrator and provide the opportunity to reassign/reroute circuit connections.

440-20.7.1.2 [RFP] The SVSS management application software computer shall interface with the SVSS through an Ethernet connection.

440-20.7.1.3 [RFP] The SVSS management application software shall be creditable for installation on the vessel's SECRET LAN.

440-20.7.1.4 [RFP] The SVSS management application software shall be provided to the Coast Guard for accreditation testing for the SECRET LAN. The vendor shall provide all support necessary to ensure that the software is creditable on this network.

440-20.7.1.5 [RFP] The SVSS management application software shall run on the Microsoft Windows XP® and Vista® operating systems.

- 440-20.7.2 [A009] Each ROP shall have a switch matrix to allow the operator to select which transceiver or receiver Voice Radio Circuit is patched to that ROP. The configuration of ROP shall be configurable through the SVSS management application software
- 440-20.7.3 [RFP] The Administrator shall be capable of designating which Radio Voice Circuits are available or restricted/unavailable for specific ROPs. Switch indicators representing restricted/unavailable Voice Radio Circuits shall be extinguished (i.e. an ROP on the Mess Deck may be restricted from accessing sensitive or classified voice circuits under normal operating conditions, but may be reconfigured to allow such access when functioning as the Medical Triage Center).
- 440-20.7.4 [RFP] The Administrator shall be capable of recalling and implementing a saved SVSS Communications Plan. Prior to implementing any new or recalled SVSS Communication Plan, the SVSS shall prompt the Administrator to save the current implementation.
- 440-20.7.5 [RFP] The SVSS management application software shall dynamically log any changes to the configuration of the SVSS and Radio Communications System.
- 440-20.7.5.1 [RFP] The log shall be written to the hard disk drive as configuration changes occur.
- 440-20.7.5.2 [RFP] The log shall be exportable in eXtensible Markup Language (XML) or an ASCII text format that is human readable.
- 440-20.7.5.3 [RFP] Logged information includes:
- 440-20.7.5.3.1 [RFP] Radio frequency assignments, whether controlled by the software or implemented directly at the radio or its Remote Control Head.
- 440-20.7.5.3.2 [RFP] RSP assignments.
- 440-20.7.5.3.3 [RFP] ROP matrix assignments and selected active circuits.
- 440-20.7.5.4 [RFP] A new log shall be auto-generated at the beginning of the radio day (0000Z). The previous log shall be saved with an appropriate file name to allow the Administrator to archive, print, copy and/or email the log file.
- 440-20.7.5.5 [RFP] Logged information shall be saved for a minimum of 30 days on the hard disk drive.
- 440-20.7.5.6 [RFP] The Administrator shall be capable of archiving log information via removable media (CD, DVD, Flash Drive, etc)
- 440-20.7.6 [RFP] The SVSS Communications Plan shall be exportable/importable in a format that permits it to be archived and exchanged via email for implementation by similarly equipped assets.
- 440-20.7.7 [RFP] The SVSS Communications Plan shall be exportable/importable in an ASCII text format that is human readable.
- 440-20.7.8 [RFP] The SVSS Communications Plan shall be exportable/importable in a format (i.e., eXtensible Markup Language (XML)) that provides the ability for Area, District and Sector staff personnel to create, import, view, edit, save,

and exchange the communications plan for import into the SVSS where it can be accepted and stored as an SVSS Communications Plan.

- 440-20.8 [RFP] The SVSS shall pass testing for Type I Environmental Vibration in accordance with paragraph 5.1 of [MIL-STD-167-1](#). All frequency/amplitude ranges in Table I of MIL-STD-167-1 shall be tested. Paragraph 5.1.3.3.5 of MIL-STD-167-1 does not apply because this equipment will not be mast mounted.
- 440-20.9 [RFP] The SVSS shall have a Mean Time Between Operational Missions Failure (MTBOMF) of 1,440 hours based on a deployment schedule meeting the Independent Operations Endurance requirements in COR [Section 070](#) with the system in operation 24 hours per day.
- 440-20.10 [A009] The SVSS shall have a Mean Time Between Failure (MTBF) of 5,000 hours.
- 440-20.11 [RFP] The SVSS shall have a Mean Time To Repair (MTTR) not to exceed 2 hours at the organizational level.
- 440-20.12 [RFP] The SVSS shall pass testing for Grade A, Class I, Type A shock in accordance with [MIL-S-901D](#).
- 440-20.13 [RFP] The SVSS shall be capable of full operation in up to 95% humidity in accordance with paragraph 5.1.2.7 of [MIL-STD-2036A](#) (MIL-STD-810F Method 507.3)
- 440-20.14 [RFP] The SVSS shall operate in a controlled environment in temperature ranges from 10°C (50°F) to 50°C (122°F) in accordance with paragraph 5.1.2.17.2 of [MIL-STD-2036A](#).
- 440-20.15 [RFP] The SVSS shall include protective shields to protect personnel from accidental contact with potentials in excess of 30 volts RMS or 30 VDC during operation or maintenance action in accordance with paragraph 5.1.3.10.2 of [MIL-STD-2036A](#).
- 440-20.16 [RFP] A ground terminal shall be provided on the SVSS. The ground terminal shall be located on the input power connector or on the equipment terminal board and shall connect to the internal chassis by means of conductors at least equal in size to one of the input power conductors. Safety grounding within the equipment shall terminate on the ground terminal in accordance with paragraph 5.1.3.10.5 of [MIL-STD-2036A](#).
- 440-20.17 [RFP] When power is routed externally between individual units of equipment, a ground conductor shall be included with the power conductors and shall connect to the ground terminals of individual units in accordance with paragraph 5.1.3.10.6 of [MIL-STD-2036A](#).
- 440-20.18 [RFP] The equipment shall be designed or selected as modular plug-in devices and shall be marked or keyed to preclude insertion or installation in the wrong position or location in accordance with [MIL-HDBK-454](#). All components or groups of components performing similar functions shall be physically and electrically interchangeable without requiring any preparation other than resetting of exterior switches, connection of cables, or insertion of plug-in components.
- 440-20.19 [RFP] The SVSS shall exhibit the following TEMPEST port to port isolation characteristics:

- 440-20.19.1 [RFP] Analog - 80 dB over the baseband audio frequency range between 300 Hz and 10 kHz in accordance with paragraph 5.1.11.4 of [COMDTINST C5510.4G](#).
- 440-20.19.2 [RFP] Digital - 60 dB over the frequency range from one times the basic data rate (RD) to ten times the rate of the signal processed in accordance with paragraph 4.3b of [NTISSAM TEMPEST/2-95](#).
- 440-20.20 [RFP] The SVSS shall provide the operator alerts/warnings with a greater probability of detecting the triggering condition than normal observation would provide in the absence of the display in accordance with paragraph 5.2 of [MIL-STD-1472F](#). Failure of a background diagnostic test will generate an outage report. These alerts shall include but not be limited to the following:
- 440-20.20.1 [RFP] Power Supply Failure.
- 440-20.20.2 [RFP] Automatic transfer to backup modules in the event of a primary module failure.
- 440-20.20.3 [RFP] Failure of background diagnostic test.
- 440-20.21 [RFP] The SVSS shall meet the criteria for Normal Acceptable Intelligibility as shown in table VI of [MIL-STD-1472F](#).
- 440-20.22 [RFP] The SVSS shall exhibit the following performance characteristics:
- 440-20.22.1 [RFP] Audio Input Level: 0 dBm nominal adjustable from -20 dBm to +10 dBm.
- 440-20.22.2 [RFP] Input Impedance: 600Ω +/- 10% balanced.
- 440-20.22.3 [RFP] Audio Output Level: 0 dBm nominal adjustable from -20 dBm to +10 dBm.
- 440-20.22.4 [RFP] Output Impedance: 600 Ω +/- 10% balanced.
- 440-20.22.5 [RFP] Through-path Gain: 0 dBm +/- 0.5 dBm.
- 440-20.22.6 [RFP] Frequency Response: +/- 3 dB from 300 Hz to 3.2 kHz.

440-21 [RFP] Digital Voice Logger (DVL) Audio Recording System

- 440-21.1 [RFP] The Digital Voice Logging (DVL) audio recording system will be used as a storage and archiving device for audio from radio and telephone circuits.
- 440-21.2 [RFP] The DVL system shall be capable of recording, replaying, archiving, and exporting selected incoming and outgoing analog voice channels from installed radio and telephone equipment. The DVL shall be wired and equipped to accept audio for 25 analog channels.
- 440-21.3 [RFP] The DVL system shall be provided as a mission-critical, fault-tolerant device eliminating single points of failure and providing very high availability of 99.9% overall system uptime and no loss of recording.
- 440-21.4 [RFP] The DVL system shall provide a means to ensure the authenticity of audio and associated data. This means shall be suitable for use in a court of law or in matters relating to homeland security. Associated data includes the unique identity of the recorder; the circuit designation; the time, date and duration of the call; the caller ID/ANI/ALI if available from the telephone interface and a record of any outbound DTMF digits dialed.

- 440-21.5 [RFP] The DVL system shall create an event log to document all faults. Alarms shall be configurable to provide an alert in the Pilot House for selected fault/alarm conditions.
- 440-21.6 [RFP] The DVL system shall include software-based client playback software.
- 440-21.6.1 [RFP] The client playback software shall be provided to the Coast Guard for certification and accreditation on the Classified (SECRET) LAN (COR Section 412-4). The vendor shall provide all support necessary to ensure that the client playback software is accreditable on this network.
- 440-21.6.2 [RFP] Security rules shall control access to client playback software ensuring only authorized individuals have such privileges. Access to the security configuration management capabilities shall be limited to individuals with Administrative privileges.
- 440-21.6.3 [RFP] The client playback software shall be compatible with network-connected workstations with Microsoft Windows XP® and Vista® operating systems and be designed to work with industry-standard sound cards, components and configurations. No direct connection from the workstation to the recorder shall be required.
- 440-21.6.4 [RFP] The client playback software shall be capable of displaying, mixing and playing 5 or more channels simultaneously or in sequence. It shall provide search-by-time-stamp functionality. Silent time shall be depicted and a menu shall allow the choice of including it in playback or skipping it during playback.
- 440-21.6.5 [RFP] The client playback software shall be capable of creating simple WAV or MPG digital sound files with voice time/date tags to allow the exchange of recorded voice communications. These files shall not be proprietary and any sound-equipped computer equipped with a media player should be able to play back these files. The files should be easily emailed or burned to a DVD-ROM or CD-ROM.
- 440-21.6.6 [RFP] The client playback software shall be capable of creating files that contain both the sound and all the related data that has been captured by the DVL. If required, these files shall be designed for playback on a runtime version of the proprietary client playback software, allowing all of the audio and other information relating to an event to be displayed and played.
- 440-21.6.6.1 [RFP] An unlimited software license shall be provided for a run-time version of the client playback software. It shall be designed to install on any Microsoft Windows XP® or Vista® sound-equipped computer. It shall provide a Graphic User interface (GUI) similar to the full client workstation, and shall be able to play and display all of the information captured by the DVL.
- 440-21.7 [RFP] The DVL shall interface with Voice over IP (VoIP) telephony and P25 Trunked radio communications environments, allowing capture and easy retrieval of conversations and related data elements including Talk Group identities.
- 440-21.8 [RFP] The DVL shall be housed in a 19" rack-mounted enclosure meeting the requirements of COR Section 400-3.8.
- 440-21.9 [RFP] The DVL shall have built-in diagnostics and remote access capability via Ethernet connections.

- 440-21.10 [RFP] The DVL Frequency response shall be a minimum of 300 Hz -3.2 kHz with a maximum distortion of 5%.
- 440-21.11 [RFP] The DVL AGC shall be selectable per input channel. The AGC range shall be from -20 dB to +10 dB.
- 440-21.12 [RFP] The DVL shall have a Crosstalk and Channel isolation.
- 440-21.13 [RFP] The DVL shall be configurable for internal real-time clock (accuracy of +/- 1 minute per month) or for external time synchronization utilizing network time protocol (NTP).
- 440-21.14 [RFP] The DVL shall shutdown in an orderly fashion upon power failure and shall automatically restart upon restoration of power.

440-22 [RFP] Emergency Position Indicating Radio Beacon (EPIRB)

- 440-22.1 [RFP] Two (2) manually deployable, self-buoyant 406 MHz CAT I EPIRB shall be provided and installed.
- 440-22.2 [RFP] Each EPIRB shall include an internal GPS receiver for vessel location transmission.
- 440-22.3 [RFP] The EPIRBs shall be FCC Type Approved and shall transmit the following distress signal levels when activated:
- 440-22.3.1 [RFP] A 5 watts +2dB (406.025 MHz) digital distress/position message transmission.
- 440-22.3.2 [RFP] A 50 milliwatt +3dB (121.5 MHz) continuously modulated local homing signal transmission.
- 440-22.4 [RFP] Each EPIRB shall be capable of conducting manually initiated Self Tests. The Self Tests shall test the battery voltage level, create and transmit a test message, fire the strobe, confirm the GPS is operational by conducting a GPS Circuitry Test, and perform a GPS Acquisition Test.

440-23 [RFP] Global Maritime Distress and Signal System (GMDSS)

- 440-23.1 [RFP] The C4ISR Communications system shall interface with Ship Systems for GPS data to support GMDSS requirements in accordance with the International Maritime Organization (IMO) requirements and SOLAS (Safety Of Life At Sea). The GMDSS equipment suite shall scan not less than three discrete international GMDSS voice alerting and coordinating frequencies.
- 440-23.1.1 [RFP] VHF DSC, required in COR Section 440-8.
- 440-23.1.2 [RFP] SART--Search And Rescue Transponder (displayed on RADAR).
- 440-23.1.3 [RFP] NAVTEX Receiver, required in COR Section 440-2.
- 440-23.1.4 [RFP] INMARSAT-C, required in COR Section 440-17.1.1
- 440-23.1.5 [RFP] Category 1 406 MHz EPIRB
- 440-23.1.6 [RFP] HF radiotelephone and radiotelex (narrow-band direct printing) equipment, with calls initiated by digital selective calling.
- 440-23.1.7 [RFP] HF Watch Receiver, required in COR Section 440-5.1.

SECTION 443. [RFP] AUDIBLE AND VISUAL SYSTEMS**443-1 [RFP] Sound Signaling Device**

- 443-1.1 [RFP] The sound signaling device shall be installed above the pilothouse.
- 443-1.2 [A009] The sound signaling device (whistle) or other device incorporating a sound signaling whistle and having similar sound characteristics shall meet the requirements of [COMDTINST M16672.2D](#) (COLREGS). The sound signaling device shall provide both manual and automatic operation from the pilothouse. The automatic sound signal shall be programmable to meet international and inland rule requirements for signal timing and amplification.
- 443-1.2.1 [A009] The sound signaling device shall operate with the maneuvering light in accordance with [COMDTINST M16672.2D](#), Rule 34 and COR Section 422-3.
- 443-1.3 [A009] Whistles and bells or other devices having similar sound characteristics shall be operational at all times under the environmental conditions described in COR [Section 070](#). If provided separately, the whistle shall be the electrical oscillation diaphragm type. The whistle shall be fabricated of corrosion resistant materials suitable for use in marine environments.
- 443-1.4 [A009] The sound signaling device and control system shall be energized by the ships vital power system.
- 443-1.5 [A009] The sound signaling device shall be provided with an integral thermostatically controlled electric heater.
- 443-1.6 [A009] Reserved.
- 443-1.7 [A009] The sound signaling device shall be operational as minimum from -40°C (-40°F) to 52°C (125°F) with a relative humidity between 20% and 100%.

443-2 [RFP] Bell Installation and Sound Performance

- 443-2.1 [RFP] Ship's Bell
- 443-2.1.1 [A009] The ship's bell shall be installed on the weather deck; as close as practical to the centerline; on, or forward, of the pilothouse. The name and hull number of the vessel shall be engraved upon the surface of the bell.
- 443-2.1.1.1 [RFP] The bell shall be mounted so that it is easily removed by one person with a wrench for stowage. A stowage location shall be provided for the bell inside the pilothouse.
- 443-2.1.2 [RFP] A ship's bell shall be provided per [ASTM F956](#).
- 443-2.1.3 [RFP] Automatic and manual controls shall be provided in the Pilothouse for the ship's bell.
- 443-2.2 [RFP] OOD Bell
- 443-2.2.1 [A009] An OOD bell or other device incorporating an OOD bell and having similar sound characteristics shall be provided. If a bell is provided it shall be in accordance with [ASTM F956](#).
- 443-2.2.2 [A009] The OOD bell/device shall be installed in the Pilothouse in the vicinity of a 1MC announcing system station or as a part of the 1MC announcing system.

443-2.3 [A009] Signaling Bell

- 443-2.3.1 [A009] A bell or other sound signaling device incorporating a bell and having similar sound characteristics meeting the signal intensity and construction requirements of [COMDTINST M16672.2D](#) (COLREGS) shall be installed on the weather deck; as close as practical to the centerline; on, or forward, of the pilothouse.

SECTION 451. [RFP] SURFACE SEARCH RADAR SYSTEMS**451-1 [RFP] Primary Surface Search RADAR System**

- 451-1.1 [RFP] A COTS X- band navigational RADAR system that meets or exceeds the requirements for radar set forth in [RTCM paper 133-87/SC 103-33](#) and Automatic RADAR Plotting Aid (ARPA) requirements of [33 CFR 164.38](#) and shall be installed as the primary RADAR system. For the purposes of these requirements, all occurrences of the word “should” in 33 CFR 164.38 shall be replaced with the word “shall.” The system shall include a 19 inch flat panel color ARPA display unit with processor and operator control modules, a dedicated keyboard and trackball, aloft unit with 8 ft array, performance monitor, integral 25KW X-Band transceiver and serial interface unit.
- 451-1.1.1 [RFP] The RADAR system shall be Type Approved in compliance with [IEC 60872-1](#) for ARPA Performance and [IEC 60936-2](#) for High Speed Craft RADAR Performance.
- 451-1.2 [RFP] The operator controls shall be part of the display unit.
- 451-1.3 [RFP] A bi-directional coupler shall be installed to monitor power at the output of the transmitter.
- 451-1.4 [RFP] The RADAR shall be electrically isolated from other ship's power circuits by means of isolation transformers.
- 451-1.5 [RFP] The RADAR shall have a disconnect switch or protection device which removes the equipment from the electrical power distribution and any other power source or signal input. This disconnect switch or protection device shall be in the same compartment and within 2m (6.6 ft) of the display unit.
- 451-1.6 [RFP] An antenna disable switch shall be provided for all mechanical antennas. The switch shall be located in the vicinity of the antenna and be accessible from outside the swing circle. Personnel warning signs and visual indicators shall be installed in the immediate vicinity of the disable switch.
- 451-1.7 [RFP] The RADAR shall interface with the ECINS, gyrocompass, speed log, DGPS, and AIS.
- 451-1.7.1 [RFP] Raw video as well as ARPA data shall be provided to the ECINS.
- 451-1.8 [RFP] The RADAR shall detect Search and Rescue Transponders (SART).
- 451-1.9 [RFP] The RADAR shall operate within ANSI/IEEE STD 521 X-Band (8 GHz to 12 GHz).
- 451-1.10 [RFP] The RADAR shall be capable of land mass detection.
- 451-1.11 [RFP] The RADAR shall be capable of tracking at least 60 targets at speeds of up to 150 knots.
- 451-1.11.1 [RFP] Targets may be acquired manually or by using annular or polygonal automatic acquisition zones.
- 451-1.12 [RFP] The RADAR shall be capable of displaying AIS data received from the AIS (COR Section 455-2).
- 451-1.13 [RFP] The RADAR sensor shall be capable of providing 360° of azimuth surveillance coverage.

- 451-1.14 [RFP] The RADAR shall operate with a combined roll and pitch impact on elevation of no more than $\pm 7^\circ$.
- 451-1.15 [RFP] The RADAR sensors shall have the capability to change from full operational mode to standby mode (non-transmitting) that supports the FRC-B's EMCON bill.
- 451-1.16 [RFP] Each FRC-B shall be provided a manufacturer authorized technical representative for installation verification, system initialization and software configuration.
- 451-1.17 [RFP] A manufacturer authorized technical representative shall be provided for each vessel for training of crew personnel. Included in the training for each vessel shall be a minimum eight hours of underway "hands on" training. The underway training shall be on the day following Preliminary Acceptance Trials and in addition to the other underway crew training prescribed in the contract.

451-2 [RFP] Secondary Surface Search RADAR System

- 451-2.1 [RFP] A commercial off the shelf X-Band secondary low-power integrated navigational RADAR processor system with ARPA capabilities shall be installed that meets the following requirements:
- 451-2.1.1 [RFP] Display: RADAR/Chart Plotter display with a minimum 10" diagonal color Liquid Crystal Display (LCD) and a minimum 640x480 pixel resolution. The display unit shall have controls for the contrast, intensity, and backlighting. The display shall be readable in direct sunlight and at nighttime without operator loss of night vision. The information displayed shall be selectable and shall include RADAR return, tracked targets, electronic charts, AIS targets, position, time, heading, depths, and navigation routes. The RADAR/Chart Plotter shall be capable of simultaneous display of split screens.
- 451-2.1.1.1 [RFP] Display modes: Heads-up, course-up, and north-up (via fluxgate or other heading input).
- 451-2.1.2 [RFP] Target tracking: The RADAR shall be capable of automatically tracking a minimum of 10 RADAR contacts. Target tracking shall be possible with an external heading input or fluxgate compass.
- 451-2.1.3 [RFP] Electronic charts: The RADAR/Chart Plotter shall be capable of displaying electronic chart data that is capable of being overlaid with RADAR video. The electronic charting capability shall be capable of being changed on-site by a media replacement process.
- 451-2.1.4 [RFP] AIS target display: The RADAR/Chart Plotter shall be capable of displaying AIS targets, with the ability to filter or disable AIS data display. The RADAR/Chart Plotter shall be able to accept NMEA 0183(v)2.1 or later sentences including all AIS NMEA sentences, specifically VDM.
- 451-2.1.5 [RFP] Range scales: 0.232km (0.125 nautical miles) to 89km (48 nautical miles) in ten or more steps.
- 451-2.1.6 [RFP] Variable range markers: Two.
- 451-2.1.7 [RFP] Electronic bearing lines: Two with one being a floating type.
- 451-2.1.8 [RFP] Bearing display: One degree or less.

- 451-2.1.9 [RFP] Antenna array: The RADAR/Chart Plotter shall operate with displays meeting either of the following requirements:
- 451-2.1.9.1 [RFP] 1.07m (3.5ft) to 1.2m (4ft) open array with less than 2.3° horizontal beam width.
 - 451-2.1.9.2 [RFP] 46cm (18in) or 61cm (24in) radome with less than 4° horizontal beam width.
- 451-2.1.10 [RFP] Range accuracy: Better than 1.5% of scale in use.
- 451-2.1.11 [RFP] RADAR transmit power: Minimum 2 kW for radome, minimum 4kW for open array.
- 451-2.1.12 [RFP] RADAR transmit frequency: 9 GHz (X-band frequency).
- 451-2.1.13 [RFP] Minimum data output: National Marine Electronics Association (NMEA) 0183 standard general sentence formats. NMEA 0183 shall be version 2.1 or higher. The RADAR/Chartplotter shall have a minimum of three data ports.
- 451-2.1.14 [RFP] Minimum data input: The RADAR/Chart Plotter shall be able to accept position, time, AIS, and heading data using NMEA standard 0183 general sentence format. Sentences using 1Hz, with baud rates of 4,800 and 38,400bps; HDT and VHW at 10Hz, with baud rates of 4,800 and 38,400bps; and VDM sentences with baud rates of 4,800 and 38,400bps. NMEA 0183 shall be version 2.1 or higher.
- 451-2.2 [RFP] The secondary RADAR display shall be installed so as not to obstruct the view through any of the bridge windows.
- 451-2.3 [RFP] The secondary RADAR shall operate with a combined roll and pitch impact on elevation of no more than $\pm 7^\circ$.
- 451-3 [RFP] Personal Computer (PC) Based RADAR Processor**
- 451-3.1 [RFP] A PC Based RADAR Processor shall be provided that is compatible with SCCS.
 - 451-3.1.1 [RFP] The PC Based RADAR Processor is an Intel Microprocessor PC based system using COTS components that connects to each individual RADAR transceiver to provide a high speed TCP/IP based radar interface that provides signal processing, tracking, and display capabilities.
 - 451-3.1.2 [RFP] The PC Based RADAR Processor shall use a Linux based Operating system to allow interoperability with the SCCS (COR Section 410-2.2.1).
 - 451-3.1.3 [RFP] The PC Based RADAR Processor communicates with the COMRIC and COMRIP software applications hosted on the SCCS workstations to pass track data and RADAR imaging for integration into the navigation and tactical applications of SCCS (specifically COMDAC, COMARPA, and COMDDC).
 - 451-3.2 [RFP] The PC Based RADAR Processor shall receive raw data from the Primary and Secondary X-Band Surface Search Radars and shall be interfaced with SCCS.
 - 451-3.3 [RFP] The PC Based RADAR Processor shall be capable of tracking 500 targets automatically or manually acquired, including RADAR, AIS, ELINT and RDF tracks.

SECTION 455. [RFP] IDENTIFICATION SYSTEMS (IFF)**455-1 [RFP] Identification Friend or Foe (IFF) Transponder System**

- 455-1.1 [RFP] A GFE AN/APX-123(V)1 IFF Transponder System shall be installed on the FRC-B. Components of this system include:
- 455-1.1.1 [A010] Unit 1: Receiver-Transmitter, RADAR RT-1912(c)/APXJ-6616/APX; 266.7mm x 139.7mm x 139.7mm (10.5 in x 5.5 in x 5.5 in), 304.8mm (12 in) clearance required in front; 5.5kg (12 lb).
 - 455-1.1.2 [A010] Unit 2: Mounting Base, Electrical Equipment MT-7238/APX; 152.4mm x 101.6mm x 279.4mm (6 in x 4 in x 11 in); 0.68kg (1.5 lb).
 - 455-1.1.3 [A010] Unit 3: Interconnecting Box J-6616/APX; 304.8mm x 254mm x 165.1mm (12 in x 10 in x 6.5 in), 304.8mm (12 in) clearance required in rear; 5.9kg (13 lb).
 - 455-1.1.4 [A010] Unit 4: Electronic Communication Equipment Case CY-8882/APX; 215.9mm x 279.4mm x 190.5mm (8.5 in x 11 in x 7.5 in); 4.1kg (9 lb).
 - 455-1.1.5 [A010] Unit 5: Control, Transmitter, RADAR C-12720/APX; 152.4mm x 152.4mm x 139.7mm (6 in x 6 in x 5.5 in); 1.4kg (3 lb).
 - 455-1.1.6 [A010] Unit 6: Omni Directional Antenna AS-177B/UPX; 177.8mm (7 in) diameter x 508mm (20 in) height; 3.6kg (8 lbf).
 - 455-1.1.7 [RFP] Cables R-IT(1), R-IT(2), and R-IT(4).
- 455-1.2 [RFP] The following NAVSEA drawings, provided as GFI, shall be used as guidance for the installation of the system:
- 455-1.2.1 [RFP] 56087-100, Rev(-).
 - 455-1.2.2 [RFP] 56087-101, Rev(-).
 - 455-1.2.3 [RFP] 56087-103, Rev(-).
 - 455-1.2.4 [RFP] 56087-107, Rev(-).
 - 455-1.2.5 [RFP] 56088, Rev(-).
 - 455-1.2.6 [RFP] 56089, Rev(-).
 - 455-1.2.7 [RFP] 5037551, Rev(B).
 - 455-1.2.8 [RFP] 5037552, Rev(B).
 - 455-1.2.9 [RFP] 5037554, Rev(B).
- 455-1.3 [RFP] The AN/APX-123(V)1 System requires 115VAC \pm 20%, 100 watts.
- 455-1.4 [RFP] The IFF system shall have the capability to change from full operational mode to standby mode (non-transmitting) that supports the asset's EMCON bill.
- 455-1.5 [RFP] IFF Transponder Antenna Requirements
- 455-1.5.1 [RFP] The Antenna shall be located so that it is capable of providing elevation surveillance coverage from 0° to 45°.
 - 455-1.5.2 [RFP] The Antenna shall be located so that it is capable of providing 360° azimuth surveillance coverage.

455-2 [A010] Marine Automatic Identification System (AIS)

455-2.1 [RFP] An L3 ProTec USCG AIS shall be provided and installed.

455-2.2 [RFP] Interfaces:

455-2.2.1 [RFP] STEDS (COR Section 410-6.3.1).

455-2.2.2 [RFP] Digital Data Switchboard (COR SECTION 413).

455-2.2.3 [RFP] Primary X-Band RADAR (COR Section 451-1.7).

455-2.2.4 [A013] C2 system (COR Section 410-2.2.1).

SECTION 457. [RFP] INFRARED SEARCH TARGET DESIGNATION SYSTEM**457-1 [RFP] Shipboard Infrared Visual Surveillance System (SIRVSS)**

457-1.1 [RFP] A GFE SIRVSS Electronic Optical – Infrared (EO-IR) sensor system shall be installed on the FRC-B. The SIRVSS is a FLIR Systems, Inc. Model Seafliir III – in a USCG specific configuration.

457-1.1.1 [RFP] The SIRVSS meets the following detection performance parameters:

457-1.1.1.1 [RFP] Small Surface Craft (30' x 6' x 2.5')

457-1.1.1.2 [RFP] 7.8 nm

457-1.1.1.3 [RFP] Based on 2°K or 2°C (Units: 1° Kelvin = 1° Celsius)

457-1.1.1.4 [RFP] Continuous Zoom Lens

457-1.2 [RFP] Components of this system include:

457-1.2.1 [RFP] Stabilized Gimbal Assembly (SGA)

457-1.2.2 [RFP] Control Electronics Unit (CEU)

457-1.2.3 [RFP] Hand Control Unit (HCU)

457-1.2.4 [RFP] Laptop Control Unit (LCU)

457-1.2.5 [RFP] Video Display Unit (VDU) and mounting bracket

457-1.2.6 [RFP] Power Control Unit (PCU)

457-1.2.7 [RFP] System Interface Unit (SIU)

457-1.3 [RFP] The EO-IR sensor shall provide electrical outputs for all available video signals.

457-1.4 [RFP] Interfaces

457-1.4.1 [A013] The SIRVSS shall provide video to the C2 system (COR Section 410-2.2.1.1).

457-1.4.2 [RFP] The SIRVSS shall have a digital control interface with the C2 system (COR Section 410-4.1.11).

457-1.5 [A009] Weights/Dimensions

Table 457-1

SIRVSS Electronic Optical – Infrared (EO-IR) Sensor System Weights and Dimensions		
Components	Weights	Dimensions
Stabilized Gimbal Assembly (SGA)	14.5kg (32 lbs)	229mm (9 in) Dia Turret x 813mm (32 in) H
Control Electronics Unit (CEU)	5.9kg (13 lbs)	276mm (10.84 in)D x 141mm (5.52 in)H x 407mm (16 in)W
Hand Control Unit (HCU)	4.1kg (9 lbs)	276mm (10.84 in)D x 141mm (5.52 in)H x 102mm (4 in)W (asymmetrical)
Laptop Control Unit (LCU)	5.9kg (13 lbs)	204mm (8 in)D x 166mm (6.5 in)H x 407mm (16 in)W
Video Display Unit (VDU) and mounting bracket	6.8kg (15 lbs)	82mm (3.23 in)D x 254mm (10 in)H x 343mm (13.5 in)W

SIRVSS Electronic Optical – Infrared (EO-IR) Sensor System Weights and Dimensions		
Components	Weights	Dimensions
Power Control Unit (PCU)	1.6kg (3.5 lbs)	204mm (8in)D x 229mm (9 in)H x 153mm (6 in)W
System Interface Unit (SIU)	0.9kg (2 lbs)	178mm (7 in)D x 121mm (4.74 in)H x 75mm (2.95 in)W

457-2 [A013] Tactical Digital Video Recording (DVR) System.

- 457-2.1 [A013] A Tactical DVR Recording system shall be provided and installed to record tactical video from the SIRVSS (COR Section 457-1). The Tactical DVR Recording system shall meet the following minimum requirements:
- 457-2.1.1 [A013] Remote software capable of being installed and run on the Microsoft Windows XP® and Vista® operating systems.
 - 457-2.1.2 [A013] A variable viewing rate up to and including 30 frames per second (FPS).
 - 457-2.1.3 [A013] A variable recording rate from 1 FPS to 30 FPS.
 - 457-2.1.4 [A013] A minimum resolution of 640 x 480 pixels.
 - 457-2.1.5 [A013] The capability of exporting video data in MPEG-4 format and video clips in .avi format.
 - 457-2.1.6 [A013] A minimum storage capacity of 250 GB.
 - 457-2.1.7 [A013] A four channel recorder that provides a maximum resolution of 30 FPS on each channel for a 120 FPS capability.
 - 457-2.1.8 [A013] Capable of remote operation on a LAN using TCP/IP.
 - 457-2.1.9 [A013] Recording modes of continuous recording, motion sensing, scheduled, and sensor activated.
 - 457-2.1.10 [A013] A local keyboard/video/mouse interface for local operation.
 - 457-2.1.11 [A013] Housed in a 19" rack-mounted enclosure meeting the requirements of COR Section 400-3.8 and shall be installed in the Electronics Equipment Space.
 - 457-2.1.12 [A013] Video output capability to a distribution switch for viewing on other monitors.
 - 457-2.1.13 [A013] The Watermark or digital signature capability.

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 500 – Auxiliary Systems

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SECTION 500. [RFP] AUXILIARY SYSTEMS**500-1 [RFP] General**

- 500-1.1 [A003] The FRC-B shall be designed, constructed, certified and classed to the requirements of the [ABS HSNC](#) Guide to meet the classification requirements in COR Section [070](#). Follow-on sections of the COR identify exceptions or additions to the ABS HSNC Guide requirements.
- 500-1.2 [RFP] The detailed sections that follow provide descriptions of the standards, rules, regulations, and USCG preferred approach for the FRC-B. The Contracting Officer will consider for approval alternative approaches, standards, rules and regulations on a case-by-case basis that are equivalent to the approach described, standards, rules and regulations. An alternate approach should only be proposed after due consideration has been given to the USCG preferred approach, standards, rules and regulations and they are found to be unfeasible because of parent craft limitations.

500-2 [RFP] Systems

- 500-2.1 [RFP] The FRC-B shall include but not be limited to the following auxiliary systems:
- 500-2.1.1 [RFP] Main and Auxiliary Cooling Systems
 - 500-2.1.2 [RFP] Exhaust Piping and Air Intake System
 - 500-2.1.3 [RFP] Fixed Fire Extinguishing System(s)
 - 500-2.1.4 [RFP] Firemain System
 - 500-2.1.5 [RFP] HVAC System
 - 500-2.1.6 [RFP] Bilge and Ballast System
 - 500-2.1.7 [RFP] Seawater Service System
 - 500-2.1.8 [RFP] Potable water System
 - 500-2.1.9 [RFP] Sanitary System (black and grey water)
 - 500-2.1.10 [RFP] Fuel Service and Transfer System
 - 500-2.1.11 [RFP] Lube Oil Service and Transfer System
 - 500-2.1.12 [RFP] Oily Bilge Collecting System
 - 500-2.1.13 [RFP] Interior and Weather Deck Drains
 - 500-2.1.14 [RFP] Hydraulic System(s)
 - 500-2.1.15 [RFP] Steering Gear System
 - 500-2.1.16 [RFP] Vents, Sounds and Overflows
 - 500-2.1.17 [RFP] Roll stabilization system (if installed on Parent Craft)

SECTION 502. [RFP] AUXILIARY DIESEL ENGINES**502-1 [RFP] General Requirements**

- 502-1.1 [RFP] The requirements of the [ABS HSNC Guide](#) and [ABS NVR](#), as modified by the USCG Appendix, shall apply to auxiliary diesel engines, as appropriate, based upon their power rating.
- 502-1.2 [RFP] Auxiliary diesel engines that meet the requirements of this Section shall be supplied. Each diesel engine shall be rated at a power and rotational speed as required by the generator. The engine rating shall be a continuous rating as defined in [ISO 15550](#).
- 502-1.3 [RFP] Electrical generating diesels shall be capable of operation under the environmental conditions described in COR [Section 070](#). Provisions shall be made for both starting and steady-state operation of prime movers per the COR [Section 070](#) ambient design weather conditions. Minimum engine room starting temperatures, conditions, and mitigating hardware or procedures shall be provided to the Coast Guard in accordance with [CDRL 502-001](#).
- 502-1.4 [A009] The rated power shall be attained under the following conditions: 38°C (100°F) if combustion air is ducted directly from outside the engine compartment or 49°C (120°F) if combustion air is drawn from the engine compartment. All other environmental conditions of COR [Section 233-1.4](#) apply.
- 502-1.5 [RFP] Auxiliary diesel engines shall meet the certification requirements the [ABS HSNC Guide](#) and/or [NVR](#). ([CDRL 502-002](#)).
- 502-1.5.1 [RFP] Upon approval of the Contracting Officer, certification may be deferred if the proposed engines are based on a previously certified engine.
- 502-1.6 [RFP] Any components attached to the engine, or those specified in this Section related to engine function, shall be either furnished by or approved by the engine manufacturer.
- 502-1.7 [RFP] Each engine shall be equipped with a manually operated barring device to allow for engine rotation for the purposes of setting valves, checking alignment or any other operation requiring manual engine rotation. The device may be permanently attached to the engine or may be bolted in place for use.
- 502-1.8 [RFP] An air filter change shall be performed on the auxiliary diesel engines after the completion of trials and prior to delivery.

502-2 [RFP] Lubricating Oil System

- 502-2.1 [RFP] The engine shall be designed for the use of lubricating oil in accordance with the manufacturer's recommendations.
- 502-2.2 [RFP] The engine shall be supplied with an integral oil sump.
- 502-2.3 [RFP] Provisions shall be made on the engine oil sump for measuring and adding lubricating oil to the engine while the engine is operating. A "normal" and "add" or "low" mark shall be shown to indicate normal operation and the need to add oil.
- 502-2.4 [RFP] The engine shall be equipped with a crankcase ventilation system to dissipate through the engine's intake system all fumes generated by the engine in the crankcase. The system shall pass crankcase vapors through a separation

device and shall maintain crankcase pressure within manufacturer's recommended limits. Oil shall be returned to the sump.

- 502-2.5 [RFP] A lubricating oil change shall be performed on the auxiliary diesel engines after the completion of trials and prior to delivery.

502-3 [RFP] Cooling System

- 502-3.1 [RFP] The cooling water system for the ship service diesel engines shall be designed in accordance with the requirements for main diesel engine cooling systems in COR [Section 233-5](#).
- 502-3.2 [RFP] Jacket water conditioner test kits shall be provided in accordance with COR SECTION [233-5.4](#).
- 502-3.3 FRC-B] Jacket water cooler – The ship service diesel engine generator jacket water cooler shall be capable of maintaining jacket water and lubricating oil temperatures within the manufacturers recommended range for standard conditions at all loads up to 115% rated load, when operating with seawater inlet temperatures as required in COR SECTION [070](#). Coolers shall be of the removable bundle, floating tube sheet design or of the plate cooler design.
- 502-3.4 [RFP] The cooling system for the emergency generator diesel engine shall utilize an air cooled radiator for heat rejection.

502-4 [RFP] Fuel Oil System

- 502-4.1 [RFP] The fuel oil system for the auxiliary diesel engines shall be designed in accordance with the requirements for main diesel engine fuel systems in COR [Section 233-6](#).
- 502-4.2 [RFP] The fuel oil system for the emergency generator diesel engine shall be a gravity feed day tank of sufficient capacity for 12 hours of operation at 100% load.

502-5 [RFP] Exhaust System

- 502-5.1 [RFP] The exhaust system for the ship service diesel generator engines shall be designed in accordance with the requirements for main diesel exhaust system in COR Section [233-7](#).
- 502-5.2 [RFP] The exhaust system for the emergency generator diesel engine shall be designed in accordance with COR Section [259](#).

502-6 [RFP] Starting System

- 502-6.1 [RFP] The starting system for the auxiliary diesel engines shall be designed in accordance with the requirements for main diesel engine starting system in COR [Section 233-8](#).

502-7 [RFP] Governors and Trips

- 502-7.1 [RFP] The diesel engine governor shall meet the requirements of COR [Section 233-9](#).
- 502-7.2 [RFP] The engine shall be equipped with an automatic trip on loss of lube oil pressure.

502-8 [RFP] Emergency Shutdowns

- 502-8.1 [RFP] Each engine shall be provided with an emergency shutdown device that complies with COR Section [233-11](#).

502-9 [RFP] Guards and Shields

- 502-9.1 [RFP] Flange shielding shall be provided on fuel and lube oil lines and filters.
- 502-9.2 [RFP] Shields and guards shall for auxiliary diesel engines comply with COR Section [233-12](#).

502-10 [RFP] Gauges and Controls

- 502-10.1 [RFP] Fuel oil pressure (after fuel filter) indication shall also be provided for the auxiliary engines.
- 502-10.2 [A003] Local controls for starting, stopping, and speed regulation shall be mounted on the instrument panel. The instrument panel shall also contain controls for manually starting and stopping the keep-warm and pre-lube oil systems. No two compartment-wide visual alarms (i.e. strobe lights) for different systems in the same compartment may have the same light lens color.
- 502-10.3 [RFP] The following alarms (for each generator set) shall be provided on the Pilothouse helm console:
 - 502-10.3.1 [RFP] Low Lubricating Oil Pressure
 - 502-10.3.2 [RFP] High Jacket Water Temperature
- 502-10.4 [RFP] The design and arrangement of controls, displays and alarms shall comply with [ASTM F1166](#).

502-11 [RFP] Identification and Marking

- 502-11.1 [RFP] Auxiliary diesel engine identification and marking shall meet the requirements of COR Section [233-14](#).

502-12 [RFP] Materials

- 502-12.1 [RFP] Magnesium alloys shall not be used. Aluminum parts shall be protected from chemical and electrolytic action.

502-13 [RFP] Emissions

- 502-13.1 [RFP] Engines shall be certified by the manufacturer to meet the emissions requirements of COR Section [233-3](#).

502-14 [RFP] Special Tools

- 502-14.1 [RFP] One set of special tools shall be delivered to each FRC-B for each engine model installed. Each set provided shall include the required or recommended tools for minor repairs, adjustments, tune-ups, and engine overhauls.
- 502-14.2 [RFP] If an electronic control and alarm system is provided that uses a computer and software for troubleshooting, that software and a compatible laptop computer shall be provided along with all required connection cables, interfaces, and power cables required.

SECTION 503. [RFP] PUMPS**503-1 [RFP] General Requirements**

- 503-1.1 [RFP] Each pumping system shall be analyzed ([CDRL 085-510](#)) to determine suitability of the pumps selected. The analysis shall include as a minimum: pump head, flow, and NPSH calculations with the pump curves and system curves. Pumps selected shall be operating in the system under normal conditions at or near the maximum efficiency point on the head capacity curve. The pumps shall have non-overloading power characteristics. Motor ratings shall be at least equal to maximum power requirements of the pump over its operating range. Data derived from the analysis shall be included in the associated system diagram. The Contractor shall verify that each pump's performance characteristics are suitable for the intended service and compatible with the hydraulic characteristics of the system served.
- 503-1.2 [RFP] Suction and discharge connections 1-1/2" and larger shall be flanged, and shall conform to ASME [B16.24](#) or [B16.5](#), as appropriate. Pumps shall be readily removable for easy access to shaft seals and items requiring maintenance or adjustment.
- 503-1.3 [RFP] Flexible or rigid couplings may be used for horizontal or vertical units. Vertical units fitted with rigid couplings shall be designed so that the thrust load of the rotating group is carried in the driver by suitable thrust bearings.
- 503-1.4 [RFP] Unless otherwise specified, pumps shall have a discharge pressure gauge and a valved connection for temporary installation of a suction gauge.
- 503-1.5 [RFP] Pumps that will operate at shut off or during very low flow service condition shall have means for re-circulation or be provided with a continuous bleed line or internal case drain leakage to prevent overheating of the pump and fluid.
- 503-1.6 [RFP] The material and the material specification of each pump component shall be specified on the pump's assembly drawing.
- 503-1.7 [RFP] Where pumps are lubricated with the pumped fluid, wearing parts shall be of a design and material which permits safe dry operation for short periods.
- 503-1.7.1 [RFP] Materials with low elongation percentage (i.e. cast iron) are prohibited.
- 503-1.8 [RFP] Location of pumps, together with piping design and arrangement, shall provide the highest practicable net positive suction head available for the pumps. For centrifugal pumps and other services located where they do not have a submerged suction, a priming pump unit shall be furnished with the pump, or a separate vacuum priming pump shall be installed.
- 503-1.9 [RFP] Seawater pumps - Internal parts of seawater pumps shall be non-corrosive materials.
- 503-1.9.1 [A009] Any composite materials for components shall be in accordance with [NAVSEA DWG 803-7226047](#) and NAVSEA Technical Publication [03Y3-101](#) Composite Material Replacement Components for Centrifugal Pumps.
- 503-1.10 [RFP] Centrifugal Pumps:
- 503-1.10.1 [RFP] Centrifugal pumps shall be designed and built in accordance with [ASTM Standard F998](#).

- 503-1.10.2 [RFP] Where centrifugal pumps of different capacities are required to operate in parallel or take suction from different sources and discharge into a common line, their characteristics shall allow each pump to carry its share of the load.
- 503-1.10.3 [RFP] Fire pumps and bilge pumps shall have constantly rising head capacity characteristic curves. Each pump shall have a characteristic curve such that at constant rated speed, the total head at shut off is not less than 10% and not more than 20% above total head at rated capacity.
- 503-1.10.4 [RFP] Centrifugal pumps operating at or near shut off shall be fitted with bleed lines.
- 503-1.10.5 [RFP] Centrifugal pumps shall be provided with casing vents to remove air and drains to remove fluids.
- 503-1.11 [RFP] Positive Displacement Pumps:
- 503-1.11.1 [RFP] Positive displacement pumps shall be the manufacturer's standard commercial marine model, built in accordance with Standards for Centrifugal, Rotary, and Reciprocating Pumps of the Hydraulic Institute. Positive displacement pumps for fuel oil service shall meet the requirements of [ASTM F1718](#).
- 503-1.11.2 [RFP] Leakage troughs shall be provided with screwed plugs arranged to permit draining into a hand carried container capable of holding the entire contents of the trough. Troughs are to be installed around pumps that handle oil.
- 503-1.11.3 [RFP] Relief valves shall be furnished for positive displacement pump discharges and shall be located so as to protect both pump and system. The discharge off the relief valve shall be directed back to the suction side of the pump.
- 503-1.11.4 [RFP] Materials of construction for the positive displacement pumps, excluding the fuel oil pumps, shall be as shown in Table 503-1.

Table 503-1

PART	MATERIAL
Casing	Steel or ductile iron
Rotors	Steel, bronze
Shafts	CRES 304 or 316
Glands	Steel
Nuts	Brass
Bushings	Bronze

- 503-1.11.5 [RFP] Special tools and equipment shall be provided as required for the inspection, maintenance, and repair of each pump. These shall include non-commercial tools, wrenches, packing hooks, babbitting fixtures, bearing pullers, and similar items.

503-2 [RFP] Pump Seals

- 503-2.1 [RFP] All pumps - Pumps shall be fitted with mechanical seals. Mechanical Seals shall be furnished in accordance with [ASTM F1511-06](#). Mechanical shaft seals shall not be fitted with set screws. Seals shall be retained on stubs or steps. Positive pressure shall be supplied to seal faces at all times. Seal mating ring face, if installed, shall be ceramic material. Seal ring face shall be carbon graphite material. Seals shall be protected from or unaffected by dry running and damaging materials in the pumped fluid. Where circulation of liquid at seal face is required, a root valve shall be installed at the source where liquid is piped to a mechanical seal. Shaft seal condition of in service pumps shall be determined by visual inspection. Failure of a seal shall not cause failure of the driver.
- 503-2.2 [RFP] Seawater pumps - Internal parts of seawater pumps shall be non-corrosive materials.
- 503-2.2.1 [RFP] Seawater pumps shall be provided with abrasive separators for the seal water lines.
- 503-2.3 [RFP] Fire pumps - Fire pumps shall have tungsten carbide seal ring face material. A packing gland for emergency packing shall be fitted to each seal. This emergency packing shall be brought into service in the event of a primary seal failure. Installation of the emergency packing shall be in accordance with the pump manufacture's recommendations. Emergency packing seal is not required if the service life of the primary seal exceeds 10,000 hours operating life.
- 503-2.4 [RFP] Pumps handling sewage and turbid (black/gray) water shall have double mechanical seals with spring-pressurized sealing oil chambers. Pumps handling gray water shall also have drip pans installed to contain any possible leakage from the pump seals.

SECTION 504. [RFP] INSTRUMENTS AND INSTRUMENT BOARDS**504-1 [RFP] General Requirements**

- 504-1.1 [RFP] Gauges, thermometers, indicators, and other instruments for machinery, pumps, piping, and mechanical systems shall be installed to ensure safe and proper operation and monitoring of equipment.
- 504-1.2 [RFP] Unless otherwise specified, the requirements in this Section do apply to equipment built or tailored specifically for FRC-B application. They do not apply to instruments and instrument boards supplied with and mounted on equipment packages.
- 504-1.3 [RFP] Electrical analog indicating instruments shall meet the requirements of [ANSI C39.1](#).
- 504-1.4 [RFP] Each instrument on the FRC-B shall have a label plate which specifies the service of the instrument. Each analog instrument shall have color bands displayed on the face showing safe operating range in green and unsafe operating range in red. Calibration data will be displayed on the instrument.
- 504-1.5 [RFP] Instruments shall be accessible and readable, and shall not be installed where the ambient temperature exceeds 63°C (145°F), where vibration or other environmental conditions exceed the instrument design limits, or where they are prone to accidental breakage. Instruments that are required to be in the weather or harsh environment shall be designated for such service.
- 504-1.6 [RFP] Failure of any instrument shall not cause the system or machinery to be inoperable. The instruments accuracy shall be adequate for operating or maintaining the systems or machinery. Calibration of instruments shall not require system shutdown.
- 504-1.7 [RFP] Gauge face diameters for tachometers and synchronizers shall be larger than 75mm (3 in). All other gauge faces shall have diameters larger than 50mm (2 in).
- 504-1.8 [RFP] All instruments in the pilothouse shall be backlit with variable intensity lighting that does not impair night vision or night vision apparatus, and shall be provided with dimmer units that vary from zero to full intensity. Instrument bezels in all locations shall be non-glare and shall be oriented such that instrument lights are not reflected in pilothouse windows.
- 504-1.9 [RFP] The design and layout of all controls, displays, alarms and the integration therein shall comply with [ASTM F1166](#).

504-2 [RFP] Thermometers

- 504-2.1 [RFP] Thermometers shall be between 75mm (3") and 127mm (5") dial size. Thermometers shall meet the requirements of [MIL-I-17244E Amend 5](#).
- 504-2.2 [RFP] Thermometers shall be of the dial type and direct or remote reading.
- 504-2.3 [RFP] Thermometers shall provide the maximum system operating temperature at approximately 75% full scale range, as well as system operating temperature in the middle third of the scale range.

- 504-2.4 [RFP] Remote reading thermometers shall be installed where specified and wherever an arrangement prevents a direct reading type from being accessible for reading, maintenance, and replacement.
- 504-2.5 [RFP] Thermometers shall be installed to be read vertically. At the optimum operating temperature, the indicating pointer shall point directly upward.

504-3 [RFP] Pressure Gauges

- 504-3.1 [RFP] Pressure gauges shall comply with the requirements of [ASME B40.100](#).
- 504-3.2 [RFP] Gauge displays shall show Imperial (US) measurements. If metric values are also shown, then the metric scale shall be contrasting in color to the Imperial (US) measure value.
- 504-3.3 [RFP] Pressure gauges shall be installed to be read vertically. At the optimum operating pressure, the indicating pointer shall point directly upward.
- 504-3.4 [RFP] Pressure gauges shall provide the maximum system operating pressure at approximately 60% of the full scale range.
- 504-3.5 [RFP] Gauges shall be fitted with root valves located on the equipment or pipe from which the measurement is being made. Gauges and instrumentation piping installation shall be fitted with cut-out valves or other devices to permit gauge isolation and removal without shutting down the piping system.
- 504-3.6 [RFP] Pressure gauges shall be provided for each displacement pump.
- 504-3.7 [RFP] Liquid filled gauges or gauges with a "pressure snubber," to absorb shocks and pulsations, shall be installed on the discharge gauge of each positive displacement pump. Dampening devices to prevent damage from vibration shall be provided on all gauges.
- 504-3.8 [RFP] A fitting shall be installed downstream of pressure-sensing line root valve for insertion of test gauge to prevent removal of permanent gauge.
- 504-3.9 [RFP] Gauges shall be isolated from corrosive fluids.

504-4 [RFP] Gauge Boards

- 504-4.1 [RFP] Gauge boards shall be installed wherever instruments can be consolidated.
- 504-4.2 [RFP] Instruments and indicators on gauge boards shall be clearly labeled and logically grouped or organized to correlate to equipment location or physical operation.
- 504-4.3 [RFP] Gauge boards with electric devices shall be installed with drip-proof protection in accordance with [NEMA 250](#), Type 12. Cable and pipe penetrations in gauge or gauge boards shall be sealed. Flammable fluids shall not be piped into these enclosures.
- 504-4.4 [RFP] Dial-type gauges and instruments on gauge boards shall be flush mounted.
- 504-4.5 [RFP] The interface component material, type of joint, and connections to the piping or pressure vessel shall be similar to and compatible with system materials.
- 504-4.6 [RFP] Gauge boards shall be constructed of steel or aluminum for interior locations and CRES for exterior locations.

- 504-4.7 [RFP] Instruments and instrument boards located on equipment shall be mounted so that vibrations are not transmitted to the instruments.

504-5 [RFP] Test Requirements

- 504-5.1 [RFP] Instruments shall be factory calibrated prior to shipment. Instrument calibration(s) shall be traceable to the [National Institute of Standards and Technology](#). Instruments subject to damage during flushing or hydrostatic testing shall be removed or protected during these evolutions.
- 504-5.2 [A010] The date of the calibration and the initials of the individual who conducted the calibration shall be clearly marked on each gauge. An electronic log with capability of printing to paper log shall be provided with a list of each gauge, the date of its calibration, and the name of the individual who performed the calibration. ([CDRL 085-507](#)) All calibrations shall be current for a minimum of 9 months after delivery.

SECTION 505. [RFP] GENERAL REQUIREMENTS FOR PIPING SYSTEMS**505-1 [RFP] General Requirements**

- 505-1.1 [RFP] Piping shall not be installed in way of work areas and walkways or where it may be subject to damage. Piping shall be run as directly as possible with a minimum of bends or joints. Piping shall be supported to prevent vibration. Pipe hangers, pipe penetrations, etc., shall meet the material requirements of COR [Section 078](#).
- 505-1.2 [RFP] The damage control requirements of [NSTM S9086-CN-020/CH-079 Volume 2](#) Section 24 shall be met.
- 505-1.3 [RFP] Welded and brazed connections shall be in accordance with COR [Section 074](#). Silver brazed fittings shall be of the pre-inserted ring type, except in sizes ½" NPS and below, in the refrigeration systems and systems which utilize K type copper tubing.
- 505-1.4 [RFP] Breakdown flanges, pipe unions or other suitable means shall be fitted for equipment removals. Inspections and maintenance shall not require removal of piping.
- 505-1.5 [RFP] Duplex sea strainers shall be installed in all system piping that take suction from the sea. Sea chest or sea cock strainers shall also be installed. Isolation valves shall be installed to permit removal of strainer baskets without shutting down associated systems. The seawater supply line to each engine shall be fitted with an isolation valve allowing the engine seawater system to be isolated from the other to repair casualties and complete maintenance actions while the other engine is in operation. The strainers shall be designed so that materials stopped by the strainer can be removed easily by removing and emptying the strainer baskets.
- 505-1.6 [RFP] Directional changes in all pressurized piping systems shall be made by bending the piping wherever feasible. Otherwise, directional changes shall be made using fittings such as elbows, tees, and butt weld fittings applied in accordance with the pipe manufacturer's requirements. Directional changes in copper tubing may be made by bending the tubing.
- 505-1.7 [RFP] Bend radii shall be not less than the minimum recommended by the tube manufacturer for that tube size. Directional changes in non-pressurized vents and overflows may be mitered. Where mitered joints are used, each joint shall produce a maximum directional change of no more than 45°. Where mitered joints are used, they shall not be made to trap any fluids but must be arranged to drain to the lowest point in the system.
- 505-1.8 [RFP] Piping shall be properly supported with hangers. Hangers shall not clamp on hose. If hangers are required to support hose assemblies dogleg fitting shall be used. Hose may not pass through stuffing tubes in watertight boundaries. All penetrations shall maintain the degree of tightness of the structure penetrated.
- 505-1.9 [RFP] Calculation shall be provided for expansion, support and flexibility of piping systems ([CDRL 085-510](#)). Piping hangers and piping arrangements shall permit piping expansion and contraction without inducing abnormal stress concentrations.

- 505-1.10 [RFP] The design and installation of rigid pipe hangers shall be in accordance with [ASTM F708-92](#).
- 505-1.11 [RFP] The materials, design and manufacture of pipe hangers and supports shall be in accordance with [MSS SP 58](#)
- 505-1.12 [RFP] Connections between sections of pipe in piping systems shall be made using fittings such as couplings, unions, tees, flanged joints, butt welded fittings, butt welding, or hose connections (where not prohibited by ABS HSNC). Metallic piping for system pressures above 690 kPa shall have silver brazed or welded fittings. Connections of tube to components with pipe thread connections shall be by means of adapters or approved swage-type compression fittings or 37° JIC flare fittings. Flare-type tube connectors shall not be used in systems carrying flammable fluids.
- 505-1.13 [RFP] Threaded connections in aluminum are prohibited, unless reviewed and approved for the specific application by the Contracting Officer.
- 505-1.14 [RFP] All joints in piping systems shall be properly aligned so that stress or distortion will not exist in or between the connected parts.
- 505-1.15 [RFP] Flexible connectors (in compliance with the HSNC Guide) shall be installed for vibration isolation between piping and machinery.
- 505-1.16 [RFP] Flexible connections shall not be installed in piping systems to correct misalignments.
- 505-1.17 [RFP] Swing-check valves shall not be installed in an athwartship direction.
- 505-1.18 [RFP] Maximum velocity limits shall be in accordance with SNAME Text "[Marine Engineering](#)", Chapter 20, Table 3 except for hydraulics (See COR Section 556-2) and seawater (See COR [Section 256](#)). The maximum velocity limits shall not exceed 4.6 m/sec (15 ft/sec) for fuel transfer systems, and 7.6 m/sec (25 ft/sec) for fuel loading and off-loading conditions.
- 505-1.19 [RFP] Pressure vessels shall also meet the requirements of the [ASME Boiler and Pressure Vessel Code](#).
- 505-1.20 [RFP] Piping diagrams and arrangement drawings shall be furnished in accordance with [GEN SPECS 505h1](#), [NAVSEA drawing 803-5001049](#), and [ASTM F1000](#) provide the list of piping symbols that are to be used. ([CDRL 085-500](#), [CDRL 085-501](#))
- 505-1.21 [RFP] Equipment and system isolation, and damage control requirements shall be in accordance with [GEN SPEC 505b5](#).

505-2 [RFP] Material

- 505-2.1 [RFP] Pipe
- 505-2.1.1 [RFP] Except as specified elsewhere in the COR, materials for piping systems shall be suitable for the service intended. Alloy parts containing copper shall not be used in aluminum piping systems. The use of copper bearing alloy parts in piping in proximity to aluminum shall be limited to the maximum extent practicable.
- 505-2.1.2 [RFP] Piping material selection shall comply with [MIL-STD-777E](#), Change Notice 7 except that the use of commercial valves and fittings is permitted. CRES is allowed for fuel systems in accordance with the [ABS HSNC Guide](#).

- 505-2.1.2.1 [A010] Spaces protected by Heptafluoropropane shall have fire-hardened fittings that meet the requirements of MIL-STD-777E, Section 4.14.1, for CO2 and Halon systems.
- 505-2.1.3 [RFP] PVC or CPVC piping or components shall not be used in any piping systems.
- 505-2.1.4 [RFP] A quality control, fabrication, and installation procedure shall be prepared for FRP pipe which shall be based on the manufacturer's recommendations. This shall be made available at the Government's request.
- 505-2.1.5 [RFP] On other than FRP hulls FRP pipe shall not be installed outboard of a hull cut-out valve.
- 505-2.2 [A009] Fittings – Fittings on aluminum pipe shall be aluminum. Fittings on copper pipe shall be bronze. Fitting on copper nickel pipe shall be bronze or butt welded copper nickel. Fittings on CRES pipe shall be CRES of the same grade as the CRES pipe. Threaded fittings shall be selected to limit the potential for galling. Fittings on FRP pipe shall be FRP. Brass fittings shall not be used in seawater piping systems. Material for all valves and fittings shall be compatible, in regards to electrolysis, with the 90/10 CuNi piping.
- 505-2.2.1 [RFP] Mechanically attached fittings shall be in accordance with [NSTM Chapter 505](#), paragraph 6.8.
- 505-2.2.2 [RFP] Belled end connections shall be in accordance with [MSS-SP-119](#).
- 505-2.3 [RFP] Hoses and Flexible Piping Devices
- 505-2.3.1 [A010] Flexible piping devices shall be in accordance with [46 CFR 56.35](#), [56.60-25](#) or the ABS HSNC Guide. Crimp type hose end fittings are preferred, but reusable hose end fittings are acceptable. All hose shall be in accordance with Society of Automotive Engineers ([SAE](#)) [J1942](#) except as noted otherwise in this COR.
- 505-2.3.2 [A010] Reserved.
- 505-2.3.3 [A010] Hoses shall not be run in vicinity of hot engine areas such as turbochargers or exhaust.
- 505-2.3.4 [A010] For non-flammable low pressure (50 psi or below) and gravity service applications slip-on fittings may be appropriate. Where hose is connected by slipping it over the end of tubing or pipe, the cut end of the tubing or pipe shall be chamfered to prevent it from cutting or chafing the hose. Hose shall not be fitted over threaded pipe. Proper hose end fitting shall be used. Where hose clamps are used they shall be all-CRES screw type hose clamps. Each connection shall have two clamps.
- 505-2.3.5 [RFP] Hose used in the black and grey water systems shall be non-permeable, smooth bore and capable of sustaining external pressure due to the vacuum system without collapsing.
- 505-2.3.6 [A010] Flexible hose 102mm (4 in) and smaller shall not exceed 762mm (30 in) in length unless required for flexibility. Larger hoses shall not exceed 1016mm (40 in) in length.
- 505-2.3.7 [A010] On machinery where low frequency resilient mounts are installed to meet space noise level criteria, multiple-leg flexible hose assemblies, in

accordance with [NAVSEA S6430-AE-TED-010](#) paragraphs 4.2.1 and 7.4, shall be utilized as flexible piping connections between the machinery and the ship for noise attenuation purposes. Monel fittings are not required. Single-leg flexible hose assemblies is permissible for machinery isolated with Distributed Isolation Material (DIM). MIL SPEC hoses and Navy replacement policies do not apply.

505-2.3.8 [A010] Reserved.

505-2.3.9 [RFP] The tagging and electronic log of hoses in piping systems shall comply with [COMDTINST M9000.6E](#), Chapter 505. ([CDRL 085-502](#))

505-2.3.10 [A010] Hose assemblies shall comply with [SAE J1273](#).

505-3 [RFP] Valves

505-3.1 [RFP] Valves shall be suitable for the intended application and shall be located where they are readily accessible in accordance with COR Section [071](#) for inspection, operation, maintenance, and removal for repair. Valves for emergency service shall be installed so that they are immediately accessible. Valves shall be compatible with the intended service and the material requirements of COR Section 505-2. Valves that may be installed in locations which are not readily accessible shall be fitted with long-stem or extension handles, or other means, to permit remote operation. Extensions passing through watertight boundaries shall be fitted with watertight stuffing tubes. Valves shall be of a type that indicate if they are open or closed by handle position. Remote reach rod extension shall not have more than 1 fixed bend from the valve to the handle on the reach rod.

505-3.1.1 [RFP] Valves with bronze trim shall be galvanically isolated from aluminum piping and hulls. This requires a flanged connection with a nonconductive gasket, and bolts with nonconductive inserts and washers. Alternately, a nonconductive patent coupling (such as a Dresser coupling) may be employed.

505-3.2 [RFP] Globe valves shall be used for varying rate of flow. Globe valves shall have renewable discs and seats.

505-3.3 [RFP] Ball valves shall have an indicator of the valve's position. Fuel tank shutoff valves shall be capable of operation both locally and from a position outside the compartment in which they are located.

505-3.4 [RFP] Valves employing resilient material must continue to provide effective closure of the line without appreciable leakage if the resilient material is damaged or destroyed as defined by [46 CFR 56](#).

505-3.5 [RFP] Pressure relief valves shall be installed, where necessary, to protect piping systems, machinery, and equipment from damage due to excessive pressure under all operating conditions. Such conditions include normal, emergency, improper operation, or malfunction of systems or equipment. Relief and safety valves shall be selected and set in accordance with [MS-18282](#) and [MS-18283](#). Relief valve discharges for seawater system shall be directed overboard. Relief valve discharges shall be directed so as not to present an environmental or personnel hazard. Refrigerant relief valve discharges shall be piped to the weather deck.

505-3.6 [RFP] FRP valves are not permitted in shell penetrations in accordance with [ABS HSNB](#), 4-3.6-2/9.13 & 4-6-3/7.9

505-3.7 [RFP] The placement of valve locking devices shall comply with [ASTM F993](#).

505-3.8 [RFP] Flange bolting shall be in accordance with [ASTM F704](#) and [ASTM F1166](#) for ease of operation.

505-4 [RFP] Vents and Drains

505-4.1 [RFP] Bronze or CRES lever-handle draincocks shall be installed at low points in all piping systems that may entrap water, including components and parts of equipment. Components and parts not provided with drains shall be fitted with draincocks. Water shall drain down to the point where the cock is connected to the piping or the component. All drains shall be readily accessible as installed, or fitted with extensions if necessary to provide accessibility.

505-4.2 [RFP] All piping systems and components shall be free of air pockets that prevent the proper operation of the system or component. Where air pockets are unavoidable or where air entrapment due to turbulence or component construction may result in the system becoming air locked, petcocks shall be installed as necessary to bleed the systems or components. Valves necessary for purging shall be mounted on the component requiring purging and shall discharge into the space where located. Lever-handle petcocks shall be installed where necessary as vents to break any vacuum that might prevent complete water drainage from any part of piping systems.

505-5 [RFP] Sealing

505-5.1 [RFP] Sealing compound or thread sealant tape shall be compatible with the material, fluid, and service for which it is intended. Teflon™ tape shall be applied to all threaded joints in potable water fill, storage, and distribution systems. Teflon™ tape shall not be used to seal threaded joints in the hydraulic system.

505-5.2 [A010] Reserved.

505-6 [RFP] Sea Connections

505-6.1 [RFP] Piping connections that penetrate the hull, except engine exhaust (if applicable) shall be fitted with an isolation valve. The valves shall be located directly on the shell or connected to the shell by pipe with strength equivalent to that of the hull. The pipe shall be no longer than what is required to connect the valve, clear any shell insulation, and provide for space to turn the handle. Longer extensions may be specifically approved if required to improve operating access by crew. Pipe longer than six nominal diameters shall be provided with reinforcing brackets to other support for the inboard end of the pipe. Valves over 1-1/2 inch shall be flanged. Fittings, nipples, nozzles, etc., connecting the valve to the hull shall be of CRES and shall be welded. Threaded connections between the hull and the valve shall not be used except where threads are not exposed to seawater.

505-6.1.1 [RFP] Seawater relief valve discharges that penetrate the hull shall have their isolation valves capable of being locked in the open position.

505-6.2 [RFP] The sea chest shall be fabricated from the same material as the hull. Discharge piping and sea chest strainer grates shall be fabricated from the same material as the hull except that for metal hulls these may be 316L CRES. Strainer grate mounting hardware shall be prevented from backing out. No portion of a sea chest or through hull fittings shall protrude beyond the shell plating. Sea chest grates shall be removable.

- 505-6.3 [RFP] Discharges and drains, except engine exhausts, that penetrate the hull shall be fitted with check valves to prevent backflow. The installation of these check valves is in addition to required isolation valves. Discharges shall be located above the load waterline. Discharge shall not be in the way of accommodation ladders or boat handling areas.
- 505-6.4 [RFP] The main engine room compartment shall be fitted with a vertical standpipe beginning at 152mm (6 in) above the centerline of the keel and terminating at the weather deck on both port and starboard locations. The terminus on each side of the weather deck shall be fitted with connection to accept the standard portable dewatering pump suction. A stop check valve shall be fitted in the vertical riser at the bottom of the riser. An exposed basket strainer, each side at least 4 times the inlet area of the pipe, shall be fitted on the bottom suction. The installed basket strainer shall be capable of being removed from installed location within 15 minutes by one person for cleaning and reinstalled in the system within 20 minutes by one person. The standpipe internal cross sectional area shall be at least two times the cross sectional area of the suction side of the port/starboard portable dewatering pump. A valve shall be installed at each weather deck connection to isolate that side from other side.

SECTION 506. [RFP] OVERFLOWS, AIR ESCAPES, AND SOUNDING ARRANGEMENTS**506-1 [RFP] General Requirements**

506-1.1 [RFP] Overflows and Air Escapes:

- 506-1.1.1 [RFP] Overflows and air escapes shall be combined wherever practicable. Overflows shall be provided and installed for all compartments or tanks into which liquid is delivered under pressure. Air escapes shall be provided and installed in all tanks having filling or suction connections, as well as voids. Piping shall be sloped to ensure gravity drainage of the piping back to the tank.
- 506-1.1.2 [RFP] Overflow systems shall be designed so that the combined static and dynamic head in the overflow line during the most critical overflow condition does not exceed the design head of the tank or compartment. The maximum overflow rate for each tank shall be the design filling rate or the internal transfer rate, whichever is greatest. Maximum pump operating characteristics shall also be accounted for when establishing overflow rates. The size of the overflow shall comply with the [ABS HSNC Guide, 4-6-4/9.5.2](#).
- 506-1.1.3 [RFP] A minimum of two vents from the sewage holding tank shall terminate above the main deck and shall not terminate in the vicinity of doors, hatches, airports, or ventilation intakes. Vents shall terminate one port and one starboard. The overflow from the sewage holding tank shall terminate just below the main deck and shall not terminate in the vicinity of small boat operations.
- 506-1.1.4 [RFP] Overflows from fuel oil tanks shall be designed so that liquid will not be discharged through vents when a tank is being filled at the designed filling rate. Overflows from fuel oil tanks shall be led to an overflow tank sized to accept the quantity of fuel that can be transferred in 2 minutes at the maximum transfer rate.
- 506-1.1.5 [RFP] The location and arrangement of overflows and air escapes shall prevent spilling liquid when the FRC-B is subjected to the design conditions described in [COR Section 070](#). The location of overflows shall result in the minimum number of penetrations of watertight or oil tight structure.
- 506-1.1.6 [RFP] Air escapes shall be sized in relation to the maximum filling or draining rate of the tank. They shall be sized to limit the air velocity to not more than 7m/s when the tank or compartment is being filled at its maximum design rate, but in no case shall the pipe size be less than 1-1/2 inch NPS.
- 506-1.1.7 [RFP] Air escapes from voids may terminate in environmentally controlled compartments but shall not terminate in berthing compartments or compartments assigned primarily for electrical or electronic equipment. Air escapes from potable water tanks shall have insect screens of 18 mesh. Screens shall be bronze, brass, or nickel-copper alloy and be installed so that they cannot be easily painted over or damaged.
- 506-1.1.8 [RFP] Air escapes for different services may be combined, providing requirements within this Section are met, except that air escapes from tanks carrying different liquids shall not be combined. If air escapes are combined, a drop-out section shall be installed in each air escape to permit testing the tanks individually. If air escapes are joined together, or to a header, the area

- of common air escape or header shall be not less than that required to limit the air velocity to 7m/s (23 ft/s) when the tanks are filled or drained at maximum designed rates.
- 506-1.1.9 [RFP] Air escapes from tanks or compartments carrying flammable, combustible, or toxic vapors shall terminate clear of air ports, ventilation intakes, other openings into the FRC-B, and sources of ignition such as combustion exhaust gas outlets.
- 506-1.1.10 [RFP] Tank overflows and air escapes which extend above weather decks shall be at least 760mm (30 in) from the deck to the inside of the return bend, and shall be provided with vent check valves.
- 506-1.1.11 [RFP] Air escapes from fuel oil shall terminate above the weather deck. The lower end may be connected to overflow piping on the tank side of the check valves, provided the overflow is connected to the highest point on the tank top. They shall not be combined with sounding tubes. The diesel oil and waste oil tank vent terminals shall also be provided with flame screens.
- 506-1.1.12 [RFP] Air escapes from fuel tanks and waste oil tanks shall be independent of all other air escapes.
- 506-1.1.13 [RFP] Overboard discharges and shell connections shall meet the requirements of [46 CFR 56.50-95](#).
- 506-1.1.14 [RFP] Overflow pipes, with exception that overflow tanks are not required, shall meet the requirements of the [ABS HSNC Guide, 4-6-4/9](#).
- 506-1.1.15 [RFP] Fuel Oil and lubricating oil discharge containment shall meet the requirements of [33 CFR 155.320](#), except, regardless of gross tonnage, each fuel oil filling and lubricating oil station shall have a 19 liter (5 gallon) fixed containment installed with a drain plug as low as possible in the side of the containment for draining seawater/rain water. Means shall be provided for securing the plug at the cofferdam when the plug is not in use. All fuel oil and lubricating oil fill and discharge connections shall be located within the bounds of fixed containment.
- 506-1.2 [RFP] Sounding Tubes:
- 506-1.2.1 [RFP] Sounding tubes shall be provided and installed for all inner bottom compartments, cofferdams, the chain locker, drain tanks, fuel tanks, lube oil tank, waste oil tank, oily water holding tank, and voids below the full load waterline adjacent to the shell plating. Sounding tubes shall not be installed in potable water tanks or sewage holding tanks.
- 506-1.2.2 [RFP] The upper ends of sounding tubes for fuel tanks shall terminate on the weather deck. The upper ends of other sounding tubes which terminate above the full load waterline shall be located, where possible, on open decks or in passageways. These ends shall be fitted with a valve and a cap and chain except where they may form an obstruction, in which case flush-type plug fittings shall be provided. Where a sounding fitting must be located in a compartment, its location shall be readily accessible and shall not interfere with the function of the compartment. Sounding fittings shall not be located in locked or carpeted compartments, or where oil from a tank being filled could accidentally be discharged from an open fitting onto a hot surface or on electrical or electronic equipment. Flush sounding fittings shall not be located in any areas where water might normally be on the deck. A wrench for

opening the sounding tube cap or plug shall be mounted on the bulkhead adjacent to the sounding tube.

- 506-1.2.3 [RFP] The sounding tube caps for all oil tanks shall be designed so that any accumulated air pressure in the tube will be gradually released and equalized before the cap or plug is completely unscrewed.
- 506-1.2.4 [RFP] Sounding tubes shall measure fluid in a tank or compartment at its lowest level. A sounding tube of not less than 1-1/2 inch NPS shall be installed. Such tubes may be run on an angle or they may be bent to a radius of not less than 3m (9.8 ft) meters.
- 506-1.2.5 [RFP] A 13mm (0.5 in) striking plate of the same material as the tank shall be provided at the bottom of each sounding tube or welded to the tank bottom in way of the sounding tube to protect the tank plating from damage by the sounding device.
- 506-1.2.6 [RFP] All sounding tubes shall terminate higher than the highest level of the tank or compartment to which they are fitted.

SECTION 507. [RFP] MACHINERY AND PIPING DESIGNATION AND MARKING**507-1 [RFP] Scope**

- 507-1.1 [RFP] This Section contains requirements for the assignment of basic location numbers, designation, marking of machinery, equipment, piping systems, heating, ventilation, and air conditioning (HVAC) systems.

507-2 [RFP] General

- 507-2.1 [RFP] All machinery and associated equipment shall have label plates to identify them by functional name. Where there are multiple units, label plates shall also include an identifying number in relationship to the centerline: odd to starboard, even to port.
- 507-2.2 [RFP] Where there is more than one similar service component on the same side, the equipment shall be identified with the appropriate number marking and a designated letter marking. The most forward equipment letter shall follow the identifying number with the letter "A", with each subsequent piece of equipment to follow with the alphabetical lettering sequence.

507-3 [RFP] Standards and Specifications

- 507-3.1 [RFP] Machinery, equipment, and operating gear and systems shall have information plates where necessary to minimize the possibility of damage to personnel, machinery, equipment, or systems from faulty operation or maintenance. Label plates and information plates shall be installed where they can be easily read from a normal watchstanding position or operating station.
- 507-3.2 [RFP] Adhesives shall not be used where the temperature could exceed 121°C (250°F).
- 507-3.3 [RFP] Machinery plant and marking plates shall meet requirements for severe service as specified in [MIL-P-15024/5](#).
- 507-3.4 [RFP] [NAVSHIPS Dwg. 805-1640412](#) shall be used for determining marking plates for components and systems.
- 507-3.5 [RFP] For operation and safety instructions, [NAVSHIPS Dwg. 805-1640412 Rev A](#) shall be used for determining marking plates for components and systems.
- 507-3.6 [RFP] The method of marking deck plates for sounding pipes shall be as shown on [NAVSHIPS Dwg. 810-1385848](#).
- 507-3.7 [RFP] Piping system components shall be assigned designations in accordance with [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 505.c8, except that the three part designation system shall be used throughout the FRC-B.
- 507-3.8 [RFP] Piping system components shall be labeled in accordance with NAVSEA [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 507. Other effective industry standard means of indicating service of pipes running through tanks and voids, such as labels on manholes, shall be allowed.
- 507-3.9 [RFP] Damage control (DC) closure classifications shall be in accordance with [NSTM Chapter 079, Volume 2](#).

507-4 [RFP] Materials

- 507-4.1 [RFP] Plates shall be of brass, aluminum, CRES, or other suitable materials, such as specified in [MIL-DTL-15024](#) and [ASTM F992](#). Copper bearing plates shall not be used on aluminum components. Plates in machinery compartments shall be of metal suitable for severe service, such as specified in [MIL-P-15024/5](#). Uniformity in material and method of marking shall be required in any one application and for similar applications. Plates installed in the weather shall not be of copper containing alloys.

507-5 [RFP] Color Coding

- 507-5.1 [RFP] Color coding of gas cylinders shall be in accordance with [MIL-STD-101](#).
- 507-5.2 [RFP] Color coding for covering valve handwheels and operating levers shall be painted in accordance with [COMDTINST M10360.3C, Coatings and Color Manual](#); Table 11-8.
- 507-5.3 [RFP] All piping systems shall be color coded, marked, and identified in accordance with [COMDTINST M10360.3C, Coatings and Color Manual](#), Chapter 11.

SECTION 508. [RFP] GUARDS AND SPRAY SHIELDS**508-1 [RFP] Guards**

508-1.1 [RFP] Components or parts of the various systems that are exposed to damage from personnel, maintenance of adjacent equipment, or stowed articles of equipment shall be protected by means of mechanical guards. The guards shall be of sufficient strength to serve as steps if located where such use may be anticipated. All guards shall be removable. All guards shall be painted in accordance with the requirements of [COMDTINST M10360.3C](#).

508-2 [RFP] Spray Shields

508-2.1 [RFP] In machinery spaces, spray shields shall be installed on flanged joints (including flanged covers on equipment) in piping containing flammable fluid or toxic substances. For areas outside machinery spaces, spray shields shall be installed on flammable fluid piping flanged joint located in direct plane of electrical equipment enclosure or motor. Protection is not required for electrical equipment which is totally enclosed, watertight, spray-tight, submersible, or explosion-proof. Spray shields shall be aluminized glass cloth construction in accordance with [ASTM F1138](#). Spray shields are not required on the following:

508-2.1.1 [RFP] Piping not subject to being pressurized (e.g., gravity fill lines and suction piping, which cannot be pressurized under any operating condition).

508-2.1.2 [RFP] Piping located in voids.

508-2.1.3 [RFP] Tank sounding tubes, vents, and overflows.

508-2.1.4 [RFP] Joints located within metal shielding enclosures.

508-2.1.5 [RFP] Piping on weather decks.

508-2.1.6 [RFP] Flanges which are self-shielded, such as lip, outside the gasket and the gasket is positively captured.

508-2.1.7 [RFP] Unions and union-type fittings.

508-2.2 [RFP] Spray shields for duplex filters and strainers shall be in accordance with [NAVSEA 0948-LP-102-2010 REV 1](#). Duplex strainer shields shall be constructed of sheet metal.

SECTION 509. [RFP] THERMAL INSULATION AND ACOUSTIC ABSORPTIVE TREATMENT FOR DUCTS, TRUNKS AND PIPING**509-1 [RFP] General Requirements**

- 509-1.1 [RFP] Surfaces which can attain a temperature of 52°C (125°F) or higher during any service condition shall be insulated to protect personnel, to prevent undesirable transfer of heat to the surroundings, and to prevent the transfer of heat from the component wherever such transfer would be detrimental to operation of the component or system.
- 509-1.2 [RFP] To reduce the risk of personnel injury or fire, non-insulated surfaces which can attain a temperature of 205°C (400°F) or higher shall be shielded as necessary to prevent the impingement of a flammable fluid on these hot surfaces. The temperature of the shielding shall be less than 52°C (125°F).
- 509-1.3 [RFP] Where there is danger of personnel coming in contact with non-insulated hot surfaces the surfaces shall be enclosed in shielding.
- 509-1.4 [RFP] Piping requiring insulation which passes through joiner bulkheads or FRC-B structure without the use of non-tight sleeve fittings shall have the insulation run through intact.
- 509-1.5 [RFP] The area of application, extent of coverage, and thickness of insulation applied at all locations shall be adequate for the intended purpose. Insulation thickness shall be in accordance with [ASTM F683](#). [MIL-STD-769J](#) is an acceptable alternative.
- 509-1.6 [RFP] Where insulation is not required, anti-sweat treatment shall be applied to prevent condensation which may be detrimental to habitability, safety, or maintenance by dripping onto such items as personnel, electrical equipment, machinery, stores, or supplies.
- 509-1.6.1 [RFP] Anti-sweat treatment. Insulate and lag all exposed piping, including associated pipe hangers, valves, and fittings with an elastomeric foam insulation system conforming to Electric Boat Specification [EB 4013](#), Anti-Sweat and Refrigerant Insulation Systems (Sheet and Tubes), in accordance with the "Supplementary Requirements" section of [ASTM F683](#) and applicable details of [NAVSEA Drawing 804-5959214](#). Select the material thickness in accordance with Table 5 (Thickness of Elastomeric Foam Plastic Insulation Piping, -20°F to 180°F (-29°C to 82°C) of [ASTM F683](#). Paint the new insulation lagging in accordance with [COMDTINST M10360.3C](#), using the coating system specified for "Insulation Surfaces, Fiberglass Sheet/Closed Cell PVC Foam" in Appendix B (Cutter and Boat Interior Paint Systems).
- 509-1.7 [RFP] Insulated ducting which passes through joiner bulkheads, drop ceilings, or FRC-B structure without the use of sleeve fittings shall have the insulation run through intact.
- 509-1.8 [RFP] Lagging shall be applied to insulation to protect it and to provide a surface for the application of vapor barrier coating, except where sheathing is installed.
- 509-1.9 [RFP] Sheathing (metal lagging) shall be provided on insulation in high traffic and other areas where the risk of damage to the insulation is high. Insulation installed adjacent to plumbing fixtures and cooking facilities shall be sheathed.

- 509-1.10 [RFP] Vapor barrier coating shall be applied to insulation to prevent penetration of moisture. Insulations having aluminum foil or other moisture-proof facing shall have joints sealed with tape of the same type material. No additional vapor barrier treatment is required.
- 509-1.11 [RFP] Reusable insulation covers shall be installed to permit servicing of machinery, equipment, ducting, and valve takedown joints.
- 509-1.12 [RFP] Surfaces shall be cleaned and prepared as specified in COR [Section 631](#) prior to the application of insulation.
- 509-1.13 [RFP] Insulation materials shall not support combustion, melt, drip, or flow. Flame spread and smoke density in accordance with [ASTM E84](#) shall be less than 30/100.
- 509-1.14 [RFP] Insulation or acoustic treatment shall not affect the watertight integrity of any structural boundary.
- 509-1.15 [RFP] Insulation required to meet environmental conditions aboard the cutter shall meet the requirements of [46 CFR 72](#)

509-2 [RFP] Standards and Specifications

- 509-2.1 [RFP] For duct work [NAVSHIPS Dwg. 804-5773932](#) shall be used for guidance only for the installation of insulation to allow for alternative duct types such as pre-insulated double walled ducts.

509-3 [RFP] Materials

- 509-3.1 [RFP] Materials which contain asbestos or refractory fiber materials (also termed ceramic fiber and alumina-silica material) shall not be used under any circumstance.
- 509-3.2 [RFP] Materials, including insulation adhesives, in contact with ducting and trunks shall not have any adverse effect on these components.
- 509-3.3 [RFP] Materials shall meet [46 CFR 164.009](#), or [NAVSHIPS Dwg. 804-5773932](#).
- 509-3.4 [RFP] Factory facings (lagging and vapor barrier). - Insulation materials with factory installed facings, such as aluminum foil, mylar, and vinyl may be used. Facings shall incorporate a reinforcing fabric, such as fibrous glass yarn, as necessary, in order to provide resistance to tearing and splitting. Facings shall also be laminated with an outer covering, such as UL rated Kraft paper, to provide a fire resistant and paintable surface so that the installation may be painted, if required. Tape closure systems used with factory faced insulation shall be compatible with the facing material.

509-4 [RFP] Tests

- 509-4.1 [RFP] Testing of piping systems, air testing of compartments and HVAC systems shall be complete prior to installation of insulation over joints.

SECTION 512. [RFP] HEATING, VENTILATION AND AIR CONDITIONING**512-1 [RFP] Scope**

- 512-1.1 [RFP] Heating, ventilation and air conditioning (HVAC) systems shall be supplied that meet the requirements of this Section.

512-2 [RFP] General Requirements

- 512-2.1 [RFP] The ventilation system shall be designed based on the design conditions of COR Section [070](#) with a minimum of 10% reserve capacity. All HVAC components including, but not limited to, the condenser, sea water cooling pump (if used), ducting, discharge registers and air handling unit shall have “reserve capacity” in addition to the capacity required to meet COR requirements. The “reserve” cooling capacity shall be available for use upon demand through the use of the onboard HVAC control systems.
- 512-2.2 [RFP] Heating and air conditioning shall be provided to control temperature for all living spaces. Spaces such as passages, stairways, toilets, showers, and pantries, that are within the living quarter’s envelope and may be accessed, shall also be temperature controlled and may serve as air returns or exhausts.
- 512-2.3 [RFP] Spaces not classified as living, but may be manned, including machinery spaces, mechanical spaces, electrical and electronic spaces, steering compartment, and stores shall be environmentally controlled to meet the requirements of the equipment in or use of those spaces.
- 512-2.4 [RFP] The HVAC system shall be operable without watch stander supervision.
- 512-2.5 [RFP] Tanks and voids shall not be heated, cooled, or mechanically ventilated.

512-3 [RFP] Design Requirements

- 512-3.1 [RFP] Each living, work, and watch standing compartment or watch standing location is considered its own zone. Each of these zones shall have means to control its temperature in its space.
- 512-3.2 [RFP] The HVAC System shall be designed to a weather air temperature of -18°C to 35°C (0°F to 95°F) dry bulb, 28°C (82°F) wet bulb.
- 512-3.2.1 [RFP] The compartment design criteria shall be in accordance with [NAVSEA T9500-AA-PRO-130](#), (Chapter 510-DPM) and [NAVSEA 0938-LP-018-0010](#) (DCM).
- 512-3.3 [RFP] Heating and cooling load calculations and air velocity and pressure drop calculations shall be prepared and submitted to demonstrate that the requirements of this section are met. ([CDRL 085-511](#))
- 512-3.4 [A010] The FRC-B HVAC systems shall comply with [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 512. Requirements relative to collection protection system (CPS) zones are not required. Requirements prohibiting the installation of duct closures in main and auxiliary machinery room ventilation systems for damage control purposes shall be disregarded.
- 512-3.5 [RFP] The FRC-B HVAC system shall be designed in accordance with [NAVSEA T9500-AA-PRO-130](#), NAVSEA Design Practices and Criteria Manual for Air Conditioning, Ventilation, and Heating of Surface Ships (DPM) and [NAVSEA 0938-LP-018-0010](#), Heating, Ventilation and Air Conditioning Design Criteria

Manual for Surface Ships of the United States Navy (DCM) except as noted below:

- 512-3.5.1 [RFP] The vessel HVAC systems shall be designed for summer conditions with a maximum dry bulb of 35°C (95°F), 28°C (82°F) wet bulb, and a maximum seawater temperature of 37°C (98°F).
- 512-3.5.2 [RFP] The summer inside conditions for main living spaces shall be 21°C (70°F) dry bulb (DB), 55% relative humidity both maximums.
- 512-3.5.3 [RFP] The summer conditions (cooling season) assumed temperatures for non-habitable spaces (ship tanks, voids, cofferdams, etc.) shall be as follows:
 - 512-3.5.3.1 [RFP] Use 37°C (98°F) for seawater exposed spaces below waterline.
 - 512-3.5.3.2 [RFP] Use 46°C (115°F) for weather exposed spaces above waterline.
 - 512-3.5.3.3 [RFP] Use 41°C (105°F) for non-exposed spaces above waterline.
 - 512-3.5.3.4 [RFP] Use 71°C (160°F) for Uptakes and/or Stacks (if applicable).
- 512-3.5.4 [RFP] The vessel HVAC systems shall be designed for winter conditions with a minimum dry bulb of 18°C (0°F) and a minimum seawater temperature of -2°C (28°F).
- 512-3.5.5 [RFP] The winter inside conditions for main living spaces shall be 18°C (65°F) dry bulb (DB) minimum.
- 512-3.5.6 [RFP] The winter conditions (heating season) assumed temperatures for non-habitable spaces (ship tanks, voids, cofferdams, etc.) shall be as follows:
 - 512-3.5.6.1 [RFP] Use -2°C (28°F) for seawater exposed spaces below the waterline.
 - 512-3.5.6.2 [RFP] Use heating season weather air design temperature for weather exposed spaces above waterline and for Stacks (if applicable).
 - 512-3.5.6.3 [RFP] Use 2°C (35°F) for non-exposed spaces above waterline.
 - 512-3.5.6.4 [RFP] Use 4°C (40°F) for Uptakes (if applicable).
- 512-3.5.7 [RFP] The steering gear space may be excluded from meeting cited standards but shall have mechanical ventilation. The alternative design conditions shall be 46°C (115°F) summer and 2°C (35°F) winter.
- 512-3.6 [RFP] [SNAME T & R Bulletin 4-7](#) shall be used to determine/select the boundary transmission heat transfer coefficients (U values) for preparing the HVAC heating and cooling load calculations (HCLC). The maximum Heat Transmission U-values are amended as follows:
 - 512-3.6.1 [RFP] 0.10 btuh/sqft/F for a space boundary temperature differential of above 24°C to 32°C (75°F to 90°F), inclusive.
 - 512-3.6.2 [RFP] 0.08 btuh/sqft/F for a space boundary temperature differential over 32°C (90°F).
- 512-3.7 [RFP] If the FRC-B design incorporates a FRP hull, manufacturer data shall be provided meeting the U-values requirements of COR Section 512-3.5.
- 512-3.8 [RFP] Direct ducting to equipment in electronics spaces shall only be used where practical.

- 512-3.9 [RFP] Ventilation ductwork for machinery compartments shall be sized such that the pressure drop at the engine inlet meets the requirements of the engine manufacturer for all operating conditions.
- 512-3.10 [RFP] Heating, Ventilation and Air Conditioning (HVAC) Diagram and Equipment Lists shall be in accordance with [NAVSEA T9500-AA-PRO-130](#), Section 7.0 and [ASTM F856](#). ([CDRL 085-009](#))

512-4 [RFP] Equipment Requirements

- 512-4.1 [RFP] Smoke dampers shall meet the requirement of [46 CFR 72.05-50](#) or [SOLAS 72/74](#).
- 512-4.2 [RFP] Ventilation Grease Interceptor Hoods shall be installed for galley equipment. Hoods for range, griddles and deep-fat fryers (if fitted) are to be equipped with semi-automatic hot water/detergent cleaning and R-102 fire extinguishing systems. All other hoods only require the semi-automatic hot water/detergent cleaning system.
- 512-4.3 [RFP] Electric air heating equipment shall comply with [46 CFR 111.87](#) or [MIL-PRF-22594](#).
- 512-4.4 [RFP] Ventilation for batteries shall be in accordance with [46 CFR 111.15-10](#). Where sealed gel-cell or other types of batteries that do not discharge flammable gas are employed, the requirements for this ventilation need not apply.
- 512-4.5 [RFP] Fans shall be constructed to marine commercial standards and perform to the Air Movement and Control Association certified ratings program ([AMCA 210-99 with Addenda A dated 8/21/2001](#) and errata dated 1/10/2006).
- 512-4.6 [RFP] All systems shall be designed to operate with all doors, windows and hatches closed. Vents shall be designed with demisters or structure to prevent ingestion of water or spray in conditions described in COR Section [070](#). Vents shall not ingest engine exhaust at any speed or heading.
- 512-4.7 [RFP] Ventilator throat heights shall meet the requirements derived from heel angles, downflooding angles and trim lines required to meet COR Section [079](#) without the use of closing apparatuses.
- 512-4.8 [RFP] Supply terminals shall not blow directly onto any berth, dining table, work bench or desk. Air shall not move past personnel at speeds greater than 250mm/sec (0.82 ft/sec) at a distance of 2m (6.5 ft) from the terminal.
- 512-4.9 [RFP] Condensate from coils shall drain to the gray water tank.
- 512-4.10 [RFP] Any compartment producing fumes, odors, substantial amounts of water vapor, heat or airborne contaminants shall be exhausted such as to maintain a negative pressure relative to other compartments.
- 512-4.11 [RFP] All system components shall be fabricated from either steel or aluminum sheet metal and shall use positive fastening seams. Refer to The Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards for system design and duct construction guidance: [AACP - Accepted Industry practice for Industrial Duct construction](#); [HVACDM - HVAC Systems Duct Design](#); [HVACMF- HVAC Duct Construction Standards Metal and Flexible](#); [RIDCS - Rectangular Industrial Duct Construction](#); [RNIDCS - Round Industrial Duct Construction](#). For the FRC-B this information is to be used as guidance only, so alternative type ducting (such as pre-insulated double piped ducting) may be used.

- 512-4.12 [RFP] [NAVSEA Dwg. No. 804-1749102, Rev C](#), for round type R closures is to be used as guidance only so alternative type ducting (such as pre-insulated double piped ducting) may be used.
- 512-4.13 [RFP] [NAVSEA Dwg. No. 804-1749103, Rev C](#), for flat oval type K closures is to be used as guidance only so alternative type ducting (such as pre-insulated double piped ducting) may be used.
- 512-4.14 [RFP] Ducting shall be protected from the entry of foreign materials during construction and carefully inspected to ensure the absence of foreign material before closure.
- 512-4.15 [RFP] The use of sheet metal screws is not permissible in duct construction. Thread cutting screws may be used where metal thickness allows a thread engagement equal to a standard nut of the same screw size and where the thread cutting screw does not have to be removed.
- 512-4.16 [RFP] Penetration of strength members and watertight bulkheads shall be kept to a minimum. Openings for ducts through structure shall be oriented so that the longer dimension is parallel to the direction of greatest stress. In no case shall the flange of a structural member be penetrated.
- 512-4.17 [RFP] Ducts shall be fair and smooth inside. Flanges and gaskets shall not protrude into the air stream. Sharp edges facing air flow and fastenings that extend into the duct (except those for securing access plates) are not permitted. Leading edges of dampers, splitters and deflectors shall be rounded or folded back.
- 512-4.18 [RFP] Cleaning and inspection ports shall be provided to access all sections of the system.
- 512-4.19 [RFP] HVAC weather terminals shall not be installed such as to interfere with operations of the crew on deck or produce tripping hazards. Each vent shall be at least 3 inches in diameter. The weather openings shall be provided with 18 mesh screens of corrosion resistant and U/V resistant material.
- 512-4.20 [RFP] The air conditioning plants can be chilled water or direct expansion type units. The air conditioning plants shall be sea water cooled. The chilled water air conditioning plant (if fitted) shall be a split condensing unit with each unit capable of carrying 50% of the total calculated HVAC load and feeding a common header. See COR SECTION 516 for additional requirements.
- 512-4.21 [RFP] The chilled water system (if fitted) shall provide chilled water to cooling components of the heating ventilation and air conditioning (HVAC) system.
- 512-4.22 [RFP] The chilled water system shall provide dedicated pumps supplying water to a main header.
- 512-4.23 [RFP] The chilled water system shall provide an expansion tank to absorb volume fluctuations, maintain pressure and be the point of the addition of make-up water.

512-5 [RFP] Tests

- 512-5.1 [RFP] The HVAC system shall be tested for flow velocities, temperature accuracy and uniformity, sound levels, water ingestion and duct tightness. Flow velocity readings shall be recorded after the system is balanced and recorded for use by the FRC-B crew in maintaining the system. Test procedures and results shall be submitted in accordance with [CDRL 512-001](#).

- 512-5.2 [RFP] The weather terminals shall be tested for water ingestion by playing a hose on the terminal at any angle. The hose shall have a minimum 5mm (0.2 in) orifice and 300 kPa (43.5 PSI) pressure and shall be held 3m (9.8 ft) away from the terminal. Passing of any amount of water greater than a mist wetting the interior of the ductwork connected to the terminal shall be cause for failure.

SECTION 516. [RFP] REFRIGERATION EQUIPMENT**516-1 [RFP] General Requirements**

- 516-1.1 [RFP] Refrigeration equipment shall be supplied which meets the applicable [ASHRAE](#) and [ARI](#) standards and [UL207](#) for the type of equipment selected. Refrigerators, freezers and ice dispensers shall be National Sanitation Foundation (NSF) approved and shall be suitable for shipboard marine service.
- 516-1.2 [RFP] Refrigeration equipment shall not employ any Class I or Class II ozone depleting substance (ODS) as defined by the Clean Air Act.
- 516-1.3 [RFP] All refrigeration equipment shall be removable without cutting the FRC-B structure.
- 516-1.4 [RFP] Refrigeration equipment shall be designed to operate under the design conditions as described in COR [Section 070](#) and shall be of a type or model previously sold and in service for marine applications.
- 516-1.5 [RFP] Refrigeration equipment shall not employ ammonia.
- 516-1.6 [RFP] Serviceable hermetic multiple cylinder reciprocating type compressors with unloaders shall be provided except that the following optional compressor types can be used: scroll, rotary and screw. Centrifugal compressors shall not be used.
- 516-1.7 [RFP] Refrigerant leakage detection shall be provided, as required in COR [Section 436-1.1.10](#).

516-2 [RFP] Self-Contained Units

- 516-2.1 [RFP] Self-contained equipment shall be defined to include reach-in chill and freeze boxes (internal gross volume of less than 2.83m³ (100 ft³) each), ice machines, beverage dispensers, and similar small refrigeration equipment.
- 516-2.2 [RFP] All refrigerators, freezers and ice dispensers shall be the self contained air-cooled type. Commercial marine equipment shall be provided.
- 516-2.3 [RFP] All self contained units shall provide accessibility for cleaning the condensers and clearances for servicing the components and adequate clearance for ventilation of any air cooled condenser coils.
- 516-2.4 [RFP] An external thermometer shall be installed in each refrigerator and freezer with the thermometer sensor placed where the warmest interior temperature of each compartment will be measured.
- 516-2.5 [RFP] Refrigerant pressure relief devices shall be incorporated into the system. Relief devices shall not vent so as to discharge onto personnel.
- 516-2.6 [RFP] Fresh water piping to systems shall be complete so that welding is not required to install or remove the system and shall be provided with stop valves so that the equipment may be removed from the system. Waste water such as condensate drains, spilled water or beverages from water coolers or beverage dispensers, or ice melt shall drain to the grey water tank.
- 516-2.7 [RFP] All self-contained units shall use refrigerants that are hydrofluorocarbon (HFC), are non-ozone depleting, have low global warming potential, and are classified as Safety Group A1 in [ASHRAE 34](#). In addition, refrigerants must be listed in [40 CFR 82](#) as an acceptable refrigerant under the Environmental

Protection Agency Significant New Alternatives Policy Program. Preferred refrigerants for self-contained equipment that meet these requirements include HFC-134a, and -400 and -500 series refrigerants.

516-3 [RFP] Air Conditioning Plant

- 516-3.1 [RFP] The air conditioning plant shall meet the requirements of [ASHRAE 26](#).
- 516-3.2 [RFP] Air conditioning plant shall use refrigerant HFC-134a, also designated as R-134a. The air conditioning plant can be chilled water or direct expansion type unit(s). The air conditioning plants shall be seawater cooled. The chilled water air conditioning plant (if fitted) shall be a split condensing unit with each unit capable of carrying 50% of the total calculated HVAC load. Only one chilled water plant is required but multiple direct expansion type condensing units may be provided.
- 516-3.3 [RFP] The air conditioning plant shall have refrigerant isolation valves installed throughout the system to aid in component repair and maintenance.
- 516-3.4 [RFP] The air conditioning plant compressor shall be fitted with a low oil pressure switch. The condenser seawater supply shall be fitted with a water failure cutout and regulating valve.
- 516-3.5 [RFP] The chilled water plant (if fitted) shall be fitted with a low water temperature alarm.
- 516-3.6 [RFP] Anodes shall be provided to protect the seawater condensers in accordance with [ASTM F1182](#), Standard Specification for Anodes, Sacrificial Zinc Alloy.
- 516-3.7 [RFP] Condensers shall meet the requirement of ASME Code Division 1, Section VIII.
- 516-3.8 [RFP] Serviceable hermetic multiple cylinder reciprocating type compressors shall be provided. Optional compressors are scroll, screw and rotary types. Centrifugal compressors shall not be used.
- 516-3.9 [RFP] The refrigerant relief devices shall discharge to the weather.

SECTION 521. [RFP] FIRE MAIN SYSTEMS**521-1 [RFP] General Requirements**

- 521-1.1 [RFP] A fire main system shall be supplied which shall be capable of delivering seawater to the fire fighting stations for the purposes of fire fighting. The fire main shall be capable of being charged from the pilothouse or the local pump control with no other actions required. The fire main pumping system shall consist of two or more power driven pumps.
- 521-1.2 [RFP] The general design of the fire main system shall be in accordance with the [ABS HSNC Guide 4-7-1/3](#) (for craft of 500 gross tons and above) except as modified in this COR Section.
- 521-1.3 [RFP] Calculations shall be prepared to support the design and equipment selection for the fire main system. ([CDRL 085-510](#))
- 521-1.3.1 [RFP] Each single fire pump shall deliver 100 PSI minimum dynamic water pressure at the nozzle at the two most remote fire stations simultaneously, each with 50 feet of 1-½" hose and the Coast Guard Standard Nozzle (NSN 4210-00-465-1906) on full stream (approx 360lpm (95gpm)) in addition to the magazine sprinkling system requirements.
- 521-1.3.2 [RFP] The system shall deliver 3% AFFF concentrate foam at no less than 50 PSI dynamic water pressure at the nozzle with the eductor and nozzle at opposite ends of the required hose at any fire plug.

521-2 [RFP] Fire Pump

- 521-2.1 [RFP] The pump shall be driven by a 440 VAC motor. It shall be sized to provide the flow and pressure requirements above. Each installed fire pump shall be identical and suitable for parallel operation. The fire pump shall take suction from the sea chest through a duplex strainer. A check valve and pressure gauge shall be installed in the pump discharge. The total area of the pipes leading from a pump shall not be less than the discharge area of the pump.

521-3 [RFP] Fire Main

- 521-3.1 [RFP] Arrangements - The piping shall be pitched to a common drain. The design will allow the entire system to be drained by gravity into the bilge without the removal of components or the use of special tools. The system is intended to remain dry when not in operation. A relief valve shall protect the pump and the system from over pressure conditions. The discharge from the relief shall discharge overboard. The system shall be capable of being segregated into two independent sections, each supplied by at least one fire pump. The fire pumps shall be located in separate spaces.
- 521-3.2 [RFP] Fire stations - Fire stations shall be installed such that any part of the FRC-B can be reached from at least two fire stations with a single length of hose. At a minimum two fire stations shall be located on the main deck, on the port and starboard sides of the deckhouse and a third fire station shall be located just outside the forward interior access to the engine room. Fire plugs shall have provisions for draining.
- 521-3.3 [RFP] At each fire station the fire station equipment shown in Table 521-1 shall be provided.

Table 521-1

EXTERIOR STATIONS	
QUANTITY	ITEM
1	Fire plug, 1-1/2" IPS, NAVSEA DRAWING No. 803-1385711
2	Nozzle, NSN 4210-00-465-1906, attached to each hose
1	Hose rack, NAVSEA DRAWING No 804-860089 , for hose listed below
2	Hose, NSN 4210-01-131-0249, one attached to the fire plug
2	Spanner wrench, 1-1/2"
1	90 gpm AFFF eductor proportioner, NSN 4210-01-112-308
2	AFFF concentrate, 3% dilution, 5 gal container
INTERIOR STATIONS	
QUANTITY	ITEM
1	Fire plug, 1-1/2" IPS, NAVSEA DRAWING No. 803-1385711
2	Nozzle, NSN 4210-00-465-1906, attached to each hose
1	Hose rack, NAVSEA DRAWING No 804-860089 , for hose listed below
2	Hose, NSN 4210-01-131-0249, one attached to the fire plug
2	Spanner wrench, 1-1/2"
1	90 gpm AFFF eductor proportioner, NSN 4210-01-112-308
2	AFFF concentrate, 3% dilution, 5 gal container

521-3.4 [A010] Stowage brackets shall be provided for all equipment. The stowage for the AFFF concentrate for exterior hose stations shall be located in the interior of the FRC-B near the exterior access most convenient to each hose station.

521-4 [RFP] Magazine Sprinkling

521-4.1 [A010] Magazine sprinkling complying with the [ABS NVR 5.4.3.1.8](#) shall be provided.

521-5 [RFP] Compartment Sprinkling (if fitted)

521-5.1 [RFP] Compartment sprinkling (if fitted) shall be in accordance with [NFPA 13](#).

521-6 [RFP] Portable Pump

521-6.1 [RFP] Suction standpipe for the first P-100 fire pump (designated herein "P-100 pump #1"). - A 3" IPS suction standpipe for P-100 pump #1 shall be provided and installed in the vicinity of the pump's stowage. The standpipe shall have a suction strainer at the shell penetration. The standpipe shall be fitted with a remotely operated shut-off valve at the shell penetration and with a check valve such that once primed the pump will maintain its prime. The upper end of the standpipe shall have female threads compatible with the hard suction hoses provided with the pump. A threaded cap shall protect the threads when the pump suction hose is not installed. A chain shall retain the cap when not in use.

The connection shall be horizontal and the elevation shall not be higher than the pump suction.

- 521-6.2 [RFP] Fire main connection for P-100 pump #1. - A 2-½" IPS connection to the fire main shall be provided and installed adjacent to the suction standpipe to facilitate charging of the fire main with the P-100 pump #1. The connection shall be provided with 2-½" IPS female threads compatible with the discharge hoses provided with the pump. A globe valve shall be installed at the connection to isolate the connection from the fire main. A threaded cap capable of withstanding fire main system pressure shall be provided. The cap shall be retained by a chain when not in use. The connection shall be horizontal and elevated no more than 300mm (11.8 in) above the deck.
- 521-6.3 [RFP] Fire main connection for the second P-100 pump (designated herein "P-100 pump #2"). - To allow charging of the fire main with both P-100 pumps simultaneously, a second 2-1/2" IPS connection to the fire main shall be provided and installed for P-100 pump #2 in close proximity to the connection described for P-100 pump #1. The connection shall be provided with 2-½" IPS female threads compatible with the discharge hoses provided with the pump. A globe valve shall be installed at the connection to isolate the connection from the fire main. A threaded cap capable of withstanding fire main system pressure shall be provided. The cap shall be retained by a chain when not in use. The connection shall be horizontal and elevated no more than 300mm (11.8 in) above the deck.
- 521-6.4 [RFP] P-100 pump #2 will take suction directly from the sea with portable equipment provided in accordance with COR 664-1.
- 521-6.5 [RFP] Outlets and heaters shall be provided in accordance with COR Section [320-4.5.3.7](#).

SECTION 528. [RFP] PLUMBING AND DECK DRAINS**528-1 [RFP] General Requirements**

- 528-1.1 [RFP] Drains shall be provided on weather decks, decks of sanitary and commissary compartments, and hatches to prevent accumulation of water.
- 528-1.2 [A002] Drain pipes shall have minimum slope in accordance with Table 528-1.

Table 528-1

Direction of Flow	Minimum Slope
Aft	0.02 : 1
Transverse	0.02 : 1
Forward	0.05 : 1

528-2 [RFP] Plumbing and Grey Water Drains

- 528-2.1 [RFP] Plumbing drains, air conditioning drains, and interior deck drains shall comply with [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 528.
- 528-2.2 [RFP] Drains shall be installed from the galley sinks, dishwasher, range hoods, lavatory sinks, deep sinks, eye washes, showers, interior deck drains and air conditioning heating/cooling units into a grey water tank (see COR SECTION 593) through water seal traps. This excludes sewage and garbage grinder drains.
- 528-2.3 [RFP] A vented deep trap shall be installed in all turbid drains before entering the grey water tank. The galley sinks, dishwasher and range hood shall drain to a grease trap which shall be readily accessible for cleaning. The grease trap shall be provided with a vent to the weather.

528-3 [RFP] Weather Deck Drains

- 528-3.1 [RFP] Weather deck drains shall comply with [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 528.

528-4 [RFP] Traps and Clean Outs

- 528-4.1 [RFP] A water seal trap shall be installed for each plumbing fixture and grey water drain. The water seal traps shall be as close to the fixture as possible. P-type traps shall be not less than 51mm (2 in) deep or more than 102mm (4 in) deep.
- 528-4.2 [RFP] Slip joints or couplings may be used on the trap inlet and also within the trap seal if a metal-to-metal ground joint is used. Each fixture trap shall have an accessible means for cleaning. All traps shall be installed in a fore-and-aft direction.
- 528-4.3 [RFP] Clean out connections shall be installed in accessible locations for all drains to permit cleaning drain pipes.
- 528-4.4 [RFP] Drain components in plain view shall be polished CRES or chrome plated.

SECTION 529. [RFP] DRAINAGE SYSTEM**529-1 [RFP] Drainage System**

- 529-1.1 [A010] The bilge drainage system shall be capable of removing water from all bilge areas. The arrangement of the bilge piping system and internal diameter of the main and branch suction lines shall comply with the [ABS HSNC Guide, 4-6-4/5 & 7](#) for bilge and ballast systems with the exception that Table 5.3.1(e) does not apply, and eductors shall not be included in the system. Each power bilge pump must have the capacity to develop a suction velocity of not less than 122m/min (400 ft/min) through the size of bilge piping required by the [ABS HSNC Guide](#). The operation of the bilge system shall be local and manual except for necessary automatic features.
- 529-1.2 [RFP] Strainer boxes shall meet the requirements of [ASTM F986](#). The strainer material shall be galvanically compatible with the hull and the piping.
- 529-1.3 [RFP] Isolation valves shall be provided in the bilge piping serving more than one machinery compartment to prevent progressive flooding in the event piping is severed or otherwise damaged by collision or grounding.
- 529-1.4 [RFP] Machinery flats, if provided, shall drain to the bilges.

529-2 [RFP] Oily Bilge Collecting System

- 529-2.1 [RFP] An oily bilge collecting system shall be installed. This system will be used for normal bilge pumping service of machinery compartment(s) and shall be independent of the bilge drainage system. The system shall collect, process, and transfer oily waste generated by shipboard machinery.
- 529-2.2 [RFP] The oily bilge collecting system shall be designed so that oily bilge collecting system pump(s) can take suction from machinery compartments or the oily water tank and discharge water overboard and discharge oily water back to the oily water tank or to the main deck discharge connection. The deck connection shall comply with [33 CFR 155.430](#) except that regardless of gross tonnage the system shall have an 18.9 liter (5 gallon) fixed containment installed with a drain plug as low as possible in the side of the containment for draining seawater/rain water. The dirty oil and oily water systems shall be cross connected to facilitate the emptying of the oily water tank with the dirty oil pump.
- 529-2.3 [RFP] The oily bilge collecting system shall be designed in accordance with [T-Ship Gen Spec Section 529](#). Small diaphragm or progressive cavity pumps (or equivalent) are acceptable alternatives to sliding shoe pumps. This pump is for housekeeping only; it is not intended that it meet 46 CFR and ABS HSNC requirements for dewatering.
- 529-2.4 [RFP] The system shall include oil content monitoring equipment required for the ship to comply with all applicable environmental regulations and international agreements, [IMO MEPC 107\(49\)](#).
- 529-2.5 [RFP] Oily water separator: The oily water separator shall have a capacity of at least 8 liters per minute. The waste oil discharge shall be led to the waste (dirty) oil tank. A waste oil pump shall be provided in the engine room to take suction from the waste oil tank to the main deck discharge connection. The deck connection shall comply with [33 CFR 155.430](#), except that regardless of gross tonnage the system shall have an 18.9 liter (5 gallon) fixed containment installed

with a drain plug as low as possible in the side of the containment for draining seawater/rain water.

- 529-2.6 [RFP] An oily water tank, 150% of the capacity of the storage tank in COR SECTION 540 shall have a fill accessible from the machinery compartment. The tank shall have a vent to the weather deck and a sounding tube. See COR SECTION 540 for the waste oil tank.
- 529-2.7 [RFP] The oily water tank shall be fitted with a fixed funnel above the platform level suitable for dumping of tank stripping.
- 529-2.8 [RFP] The oil water separator and bilge monitor shall be in accordance with [46 CFR 162.050](#) for a "15 ppm separator". Installation shall meet the standard of [IMO MEPC 107\(49\)](#).
- 529-2.8.1 [RFP] The unit shall operate automatically from controls in the oil content monitor once placed in operation. The unit shall not employ consumable components such as disposable filters.
- 529-2.8.2 [RFP] A monitor shall be provided which monitors the output of the oily water separator water discharge. The monitor shall continually analyze and report the concentration of hydrocarbon, dirt and foreign matter in the discharge flow. Automatic controls shall divert the water effluent of the separator should the oil content be less than the set point of the monitor. The diverted discharge shall return to the oily bilge collecting tank. The monitor shall have a measurement range from no less than 0 ppm to no less than 30 ppm. The monitor shall have a set point for the alarms and diverter valves that is adjustable within the measurement range. The monitor shall operate on the method of turbidity measurement before and after emulsification by ultrasonic vibration. The monitor shall have controls that are integrated with the oily water separator.
- 529-2.8.3 [RFP] The units shall be provided with the following controls and alarms. on-off switches, audible and visual alarms with announce that discharge exceeds the set point, power on and running lights and open lights for both discharge valves.

529-3 [RFP] Monitoring, Alarms, and Controls

- 529-3.1 [RFP] A pressure gauge shall be installed at suction and discharge of the bilge pump.
- 529-3.2 [RFP] The oily water tank shall have a remote level indicator and an adjustable high level alarm in the engine room and pilothouse.

SECTION 533. [RFP] POTABLE WATER SERVICE SYSTEM**533-1 [RFP] General Requirements**

- 533-1.1 [RFP] If on-board water-making capability is provided the FRC-B shall have potable water storage capacity sufficient for at least three days, based on a minimum consumption of 76 liters (20 Imperial (U.S.) gal) per day per permanent berthing accommodation.
- 533-1.2 [RFP] If on-board water-making capability is not provided then the FRC-B shall have potable water storage capacity sufficient for the entire Independent Operations duration, in accordance with COR [Section 070](#), based on a minimum consumption rate of 76 liters (20 Imperial (U.S.) gal) per day per permanent berthing accommodation.
- 533-1.3 [RFP] A potable water system shall be supplied which shall consist of storage tanks, pressure pumps, pressure tanks, one automatic proportioning brominator, a water heater, and hot and cold water distribution systems. The system shall meet the requirements of the applicable sections of [COMDTINST M5100.47](#), the [USPHS Publication 393](#) (Handbook on Sanitation of Vessel Construction).
- 533-1.3.1 [RFP] If water-making facilities are provided, the equipment shall be the Reverse Osmosis (RO) type. If RO water makers are provided, at least two shall be provided and they shall be the same type and size with fully interchangeable parts and components.
- 533-1.4 [RFP] Cross connection between the potable water system and any other system (including seawater) that could contaminate the potable water is not permitted.
- 533-1.5 [RFP] Potable water delivered to fixtures and equipment shall be by way of a non-floodable air gap of at least two supply pipe diameters between the supply and receiving connections or by way of a vacuum breaker. Locations of faucets above the rims of lavatories, sinks, and other open receiving vessels constitute an adequate air gap. Hose bibs shall be equipped with vacuum breakers.
- 533-1.6 [RFP] Potable water spigots shall be provided for fresh water washdown of the top-side weather decks and the Cutter Boat and shall be protected from freezing in cold weather.
- 533-1.7 [RFP] Pump and pressure tank selection shall be based on the largest concurrent demand. Calculations/analysis shall be performed to verify equipment selection. ([CDRL 085-510](#))

533-2 [RFP] Reverse Osmosis (RO) Water Making Apparatus (If fitted)

- 533-2.1 [RFP] Water makers shall have dedicated sea water feed pumps and strainers. Feedwater supply piping shall be fitted with a wye or simplex strainer. Each feed pump shall be capable of supplying either RO unit.
- 533-2.2 [RFP] Each RO shall take suction from a sea chest or sea chest crossover. Connection to other salt water systems is not permitted.
- 533-2.3 [RFP] Brine and circulating water discharges shall be routed directly overboard with check valve protection to prevent flood-back of units. High salinity freshwater (distillate dump) shall be routed overboard via air gap or back flow preventer to prevent contamination of potable system.

- 533-2.4 [RFP] An air gap is required for supplying potable water to other systems, such as an engine make up water tank in order to prevent contamination of the potable water system.
- 533-2.5 [RFP] A positive displacement water meter shall be provided to record potable water output.
- 533-2.6 [RFP] All piping systems connected to the water making apparatus must be designed and arranged such that each individual plant can be isolated for maintenance or casualty and permit any remaining units to continue operating at full rated capacity. Each plant shall be designed and arranged such that ancillary components are not shared. These include feedwater strainers, media filters, dump valves, salinity systems, bromination units, cyclone separators as a minimum.
- 533-2.7 [RFP] Each RO water maker shall be designed and arranged for automatic operation after being put on-line locally. A feedwater treatment system shall be included in the overall design, operation and maintenance of the RO water makers.
- 533-2.8 [RFP] A chemical cleaning system shall be included in the overall design, operation and maintenance of the RO water makers.
- 533-2.9 [RFP] Each installed unit shall meet the minimum potable water production rate listed in COR Section 533-1.1 over the complete range of operating temperatures in COR Section [070](#).
- 533-2.10 [RFP] Piping systems and equipment supporting these plants shall be sized such that all installed plants may be operated simultaneously at full capacity.
- 533-2.11 [RFP] At least two salinity cells shall be provided to protect against high salinity in discharge to the storage tanks. These cells shall be connected in parallel, such that either one will operate a “dump valve.” The piping connected to the dump valve shall pipe the non-potable water overboard.
- 533-2.12 [RFP] The trip point on the dump valves shall be set to dump if there is loss of power to the salinity system. Local and MCMS indicating lights and alarms shall be provided for a high salinity alarm. The trip point shall be set to dump if product water exceeds 500ppm of Total Dissolved Solids (TDS).
- 533-2.13 [RFP] A cyclone separator and media filtration shall be provided along with two stage cartridge filtering to protect the system from debris, silt, sedimentation and other substances that can easily and quickly clog the system. Each reverse osmosis water maker unit shall be provided with means for enabling bromine-free fresh water flushing of membranes during the shutdown/lay-up procedure.

533-3 [RFP] Storage Tanks

- 533-3.1 [RFP] There shall be at least two potable water storage tanks installed.
- 533-3.2 [RFP] Potable water storage tanks and their location shall comply with [USPHS Publication 393](#) (Handbook for Sanitation of Vessels Construction). The tanks shall be non-integral and shall be constructed of 316L CRES or FRP. The total capacity of the storage tanks shall meet the capacity requirements for usable water after deducting for head space, internal structure, and a 5% tail pipe allowance.
- 533-3.3 [RFP] A manhole, complying with [USPHS Publication 393](#), shall be fitted in the tanks, which can be removed and reinstalled by one person within an hour.

These tanks shall be fitted with fill connections from the common filling header, vents (inside the compartment), drains, and supply connections to the pump. Each tank shall have an isolatable sight glass. If RO units are installed in the ship, then, the tanks shall also be fitted with a fill connection from the RO water makers. The deck fill header shall be capable of receiving potable water at a minimum rate of 150lpm (40gpm). Other connections shall be as required but not less than the sizes of the connections on the equipment they serve. Tank stiffeners shall be located outside the tanks.

- 533-3.4 [RFP] Storage tanks shall have tank level indicator readouts at the RO water makers and at the potable water pressure pump locations. The sight glasses shall be equipped with three-way petcocks that are capable of venting and draining the sight glass.

533-4 [RFP] System Components

- 533-4.1 [RFP] Pressure Pumps - Pressure pumps shall be self-priming and shall be located such that the suction head is 1.5m (5 ft) or less. The pump shall have a disconnect switch nearby and shall be equipped with a pressure switch which starts the pump at 200kPa (29 PSI) and stops the pump at 350kPa (51 PSI).
- 533-4.2 [RFP] Pressure Tanks - Pressure tanks shall have an FDA approved vinyl bladder within a welded steel shell. They shall deliver water between 350 and 200 kPa (51 and 29 PSI).
- 533-4.3 [RFP] Brominator - An automatic proportioning bromination system shall be installed at the discharge of the water makers. The bromination system shall be capable of treating the highest output of the water makers. A bromine test kit that complies with manufacturer's testing requirements shall be provided.
- 533-4.3.1 [RFP] A system shall be installed for the purpose of disinfecting all potable water in the tanks and all water added to the tanks. Potable water shall be disinfected using bromine as the disinfecting agent. The system shall be capable of maintaining a free bromine residual of 0.2ppm in the distribution system after a 30 minute contact time in the potable water tanks. The system shall have a recirculation bromine feeder unit. The bromine feeder unit shall discharge to the tanks and not discharge to the potable water service pump suction. There shall be a sampling port with valve on the suction side of the bromine feeder unit. A cross reference chart shall be provided to show the length of time to re-circulate a water tank when the bromine free residual and tank level is known.
- 533-4.3.2 [RFP] The recirculating bromine feeder unit shall be installed to disinfect water recirculating in the storage tanks. Suction lines from each storage tank to the bromine feeder unit shall be fitted with stop check valves and isolation valves. Discharge lines to the storage tanks shall be supplied with separate isolation valves. Piping shall be arranged to permit recirculation through either or both tanks.
- 533-4.4 [A010] Water heater(s) – The FRC-B shall have electric tankless hot water heater(s) installed throughout the FRC-B where hot water is required. Tankless hot water heater(s) that supply multiple loads shall have sufficient capacity to supply those loads simultaneously at the required temperature.
- 533-4.4.1 [A010] Tankless hot water heater(s) shall have individual thermostats.

533-4.4.2 [A010] Tankless hot water heater(s) shall be marine grade and shall be one size for all applications.

533-4.5 [RFP] Two (2) single-gallon plastic bottles of liquid chlorine bleach, properly stored in a suitable container capable of containment in the event of a leak, shall be provided for emergency chlorination of the potable water tanks.

533-5 [RFP] Filling and Distribution Systems

533-5.1 [RFP] Hot and cold water components shall comply with [GEN SPECS 532b](#). [USPHS Publication 393](#) is an acceptable alternative for applicable components.

533-5.2 [RFP] The hot water distribution system shall deliver water at a minimum temperature of 54°C (129°F) and a maximum temperature of 60°C (140°F) to each point of usage. Distribution piping for both hot and cold water shall be copper water tube type K or glass reinforced plastic. Penetrations of aluminum structure shall be welded aluminum or brazed 316 CRES. Cutoff valves shall be installed at each fixture, appliance, or hose bib. Cutoff valves for exterior hose bibs shall be located within heated compartments. The system shall be capable of being completely drained to prevent freezing. Copper shall not be used to penetrate aluminum structure.

533-5.3 [RFP] A common filling header shall be installed with fill connections on deck port and starboard. The caps on the fill connections shall be padlocked. Label plates shall be installed at the fill valves and connections which shall read "POTABLE WATER ONLY".

533-5.4 [RFP] Hose bibs shall be provided in the auxiliary machinery compartment, in the main engine compartment, near the cleaning gear locker, at the aft of the deckhouse and at the forward end of the pilothouse. Connections shall be male nipples, 3/4" size, N.H. in accordance with [ANSI B2.4](#).

533-5.5 [RFP] Piping arrangements shall allow discharge of water makers to individual or multiple potable water storage tanks. The pump suction piping shall be arranged to allow suction to be taken from one or multiple tanks.

533-6 [RFP] Disinfection

533-6.1 [RFP] All tanks, piping, fixtures, valves, pumps, and all other systems or parts of systems through which potable water can flow, or in which it is intended that such water shall be stowed, shall be disinfected prior to Preliminary Acceptance Trials in accordance with [USPHS Publication 393](#) (Handbook for Sanitation of Vessels Construction requirements).

533-6.2 [RFP] Disinfecting shall be done after all other work in connection with potable water systems has been completed, and thereafter entry to or opening of any of the potable water tanks shall be prohibited. Should access to tanks be necessary, the disinfecting process shall be repeated.

533-6.3 [RFP] All water added to the system shall meet the requirements of [COMDTINST M5100.47](#), and [USPHS Publication 393](#) (Handbook on Sanitation of Vessel Construction).

533-7 [RFP] Chilled water systems

533-7.1 [A002] The chilled water system (if fitted) shall be in accordance with [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 532c.

SECTION 540. [RFP] LUBRICATION**540-1 [RFP] General**

540-1.1 [RFP] The transfer system shall be capable of transferring oil from engine sumps to a waste oil tank and from shore to service tanks or directly into engine sumps. The system shall consist of tankage and be capable of providing oil to any one of the sumps. Lube oil shall be selected based on manufacturer's recommendation with consideration given to commodity. Oil required for small consumers shall be stored in 5 gallon containers or smaller units.

540-1.1.1 [A010] A small consumer is any piece of equipment that consumes oil and has a sump smaller than 208 liters (55 gallons). The main engines and generator engines shall not be categorized as small consumers.

540-1.2 [RFP] Lubrication charts shall be provided as part of individual technical publications for all machinery and machinery systems in accordance with [CDRL 085-006](#). Waterproof and oil-proof laminated charts shall include lubrication points, volume and frequency. Volume is to be specified in delineable units, not "pumps of a grease gun." Charts shall be posted in proximity to the equipment.

540-1.3 [RFP] A cutter unique Master Lubricants Table Report shall be provided in accordance with COR Section 085-10. The report shall be generated from a Master Lubricant Table database developed by the contractor, and shall be assigned a drawing number. The database, with report generator, shall be delivered with the cutter. The database and report shall identify equipment or system, lubricants, quantities used, and stowed on the cutter. The report shall have primary sort on lubricant, and secondary sort on ship system.

540-1.3.1 [RFP] The Master Lubricants Table Report shall also provide an appendix of lubricant data to discuss the following:

540-1.3.1.1 [RFP] Unique or specified equipment requirements

540-1.3.1.2 [RFP] List of compatible or alternate lubricants

540-1.3.1.3 [RFP] Lubricant toxicity (in accordance with IMO markings)

540-1.3.1.4 [RFP] Special conditions associated with use of the lubricant (including storage, handling, and use, for example)

(Note: Lubrication requirements for specific machinery, such as diesel engines and reduction gears, are in the respective COR Sections. Common lubricants shall be selected to minimize the number of different lubricants in use on the FRC-B.)

540-1.4 [RFP] Material Safety Data Sheets (MSDS) are required for all lubricants being used on board in accordance with [29 CFR 1910.1200](#), OSHA ([CDRL 077-004](#)).

540-2 [RFP] Fittings

540-2.1 [RFP] Wherever bearings or other areas of moving contact involving two surfaces require a connection for external pressure lubrication, all the fittings installed for connection to the source of pressure shall be non-corrosive, surface check, hydraulic lubrication fittings, 1/8" PTF. In addition, they shall conform to the requirements of [SAE Standard J534](#). All connections shall be accessible, without requiring the use of tools, for lubrication.

540-3 [RFP] Storage Tank

- 540-3.1 [A010] Storage tank(s) shall be provided for each type of lubricating oil used in sumps larger than 208 liters (55 gallons). The lubricating oil tank(s) shall have a total capacity of at least one main engine lubricating oil change plus two times (2X) the amount of lubricating oil required to make up the normal operating loss of lubricating oil for the main engines and generator engines based on the endurance fuel requirements for the mission and operating profile for the range (Half Load Condition EOSL) as specified in COR [Section 070](#), or at least 208 liters (55 Imperial (US) gal), whichever is greater. The tank(s) shall have no internal stiffeners and shall be equipped with a cleanout plate to facilitate cleaning. Tank boundaries in contact with seawater are prohibited. The tank(s) shall fill from the main deck, weather. A sight glass shall be provided with root valves at the top and bottom (to isolate the sight glass from the tank), and the fill pipe shall be lockable. Oil shall be removed from the tank(s) through a self closing spigot with arrangements to suspend a catch pail. A 5-liter can with pour spigot for transfer of oil shall be provided for each small consumer and installed in a storage rack at the spigot. A drip pan shall be provided under the spigot.

540-4 [RFP] Waste Oil Tank

- 540-4.1 [RFP] A dirty oil storage tank shall have a capacity equal to or greater than 110% of the capacity of the lube oil storage tank(s). The fill for the tank shall be accessible from the machinery compartment. The dirty oil tank shall have a fill pipe connected to the top of the tank. The fill pipe shall accommodate the manual pouring of dirty oil and shall be fitted with a threaded oil-tight cap with a restraining chain. The tank shall have a vent to the weather deck and a sounding tube. The fill pipe and sounding tube may be combined.
- 540-4.2 [RFP] There shall be a connection to the tank from the oily water separator discharge; a connection enabling discharge from Fast Lube Oil Change system to the tank; and a connection enabling discharge from the tank to the main deck dirty oil discharge connection piping in accordance with 4-6-4/5.7.4 of the HSNC Guide. Each piping connection shall be capable of being isolated from the tank.

540-5 [RFP] Fast Lube Oil Change System (FLOCS)

- 540-5.1 [RFP] A fast lube oil change system (FLOCS) shall be provided and located in a machinery space. One portable coupling, hose assemblies, one suction strainer, and one 115 VAC electrical evacuation pump with a discharge hose shall be provided for each FRC-B.
- 540-5.2 [RFP] All main diesel, generator prime movers, marine gears, and the waste oil tank shall be equipped with a quick disconnect, positive shut-off FLOCS suction connection to be used with the FLOCS evacuation pump. The discharge hose shall be fitted with a quick disconnect positive shut-off coupling.
- 540-5.3 [RFP] The suction hose shall be of sufficient length to reach all FLOCS sump connections.
- 540-5.4 [RFP] The discharge hose shall be of sufficient length to reach the dirty oil tank from the FLOCS pump.

540-6 [RFP] Afloat Stowage

- 540-6.1 [RFP] Stowage for prepackaged or containerized lubricants (drums, cases, or packages) shall have a growth margin of 50%.

- 540-6.2 [RFP] The cutter shall carry sufficient lubricant quantities for at least twice the endurance with stowage in containers, reservoirs and other containment systems, as appropriate.

540-7 [RFP] Used Lubricant Handling

- 540-7.1 [RFP] A provision shall be made for the handling of used lubricants during lubricant change-out to minimize spillage and hazards. Provisions shall include controlled method of extraction or drainage, and provision for containerized transport.
- 540-7.2 [RFP] A provision shall be made for containerized waste lubricants which can not be processed as waste petroleum base products. Stowage of such containers for change-outs while underway shall be provided, as necessary.

SECTION 541. [RFP] FUEL OIL SYSTEM**541-1 [RFP] General Requirements**

- 541-1.1 [RFP] A fuel oil system shall be supplied which shall be capable of providing fuel oil of necessary quality to the main propulsion engines and diesel generators during the vessel's operation throughout its endurance profile. The system shall provide for storage, filling, transfer, venting, sounding, stripping and filtering of all storage and service tanks.
- 541-1.2 [RFP] Fuel shut-off valves shall be installed prior to the duplex filter in each fuel supply line servicing the main propulsion and generator engines. A check valve shall be installed just after the fuel shutoff valve in the supply line. Quick-closing ball valves for emergency fuel shut-off shall be installed near the fuel supply lines servicing the main propulsion and generator engines and shall be capable of local and remote actuation. The remote actuation shall be installed in a readily accessible area outside the machinery space. An instruction plate, identifying the affected engine, shall be located near the remote actuation device, inscribed as follows:

<p>ENGINE FUEL SHUT-OFF (Identify the engine served) FOR EMERGENCY USE ONLY</p>

- 541-1.3 [RFP] Piping and components shall be sized to provide for operation of the propulsion engines and the generators from all tanks if more than one is provided. Each propulsion engine and generator engine shall have separate supply lines which originate from a common header pipe. The return from each engine shall have the capability of returning to any tank. Return piping shall enter the top of the tank(s) through valve(s) equipped with relief valve bypass or through a diverter valve such that the engine pumps cannot be dead headed at the tank return. Fuel service system supply and return pipe and hose sizes shall be within the engine manufacturer's requirements.
- 541-1.4 [RFP] The fuel system shall be electrically bonded to the engines and hull.
- 541-1.5 [RFP] The fuel system shall include a duplex fuel-water separator and fuel filters installed in accordance with the engine manufacturer's recommendations. A small container and stowage shall be provided for drainage of the fuel water separator.
- 541-1.6 [RFP] If the duplex filter-water separator is on the suction side of the supply pump then the filter shall be installed in the discharge side of the pump. If the duplex filter-water separator is on the discharge side of the supply pump the filter shall be installed on the suction line of the pump. Adequate clearance shall be given to remove filter elements.
- 541-1.7 [RFP] Fuel supply lines shall be run to limit restrictions imparted on engine mounted fuel pumps in accordance with engine manufacturer's specifications.
- 541-1.8 [A010] The fuel oil system shall also meet the requirements of [46 CFR 56.50-60](#). The fuel oil system piping material selection shall comply with MIL-STD-777E, Change Notice 7 except that the use of commercial valves and fittings is permitted.

- 541-1.9 [RFP] The fuel service system shall be designed to condition fuel as needed to satisfy equipment manufacturer's requirements.

541-2 [RFP] Tank(s)

- 541-2.1 [RFP] The tanks shall meet the requirements of [ABS HSNB](#), 4-6-4/13.5 with the exception that an overflow tank shall be sized to accept 2 minutes of fuel at the maximum transfer rate (see COR Section 506-1). All fuel oil tank vents shall be combined into a single vent terminating at the filling station. All vents/overflows shall be self draining. Additionally, the service tanks shall have check valves on the vent line to prevent backflow during overflow of storage tanks.
- 541-2.2 [RFP] At a minimum the tank(s) shall be sized for the propulsion engines to meet the mission and range requirements of COR Section [070](#) and simultaneous operation of one generator while supplying the normal operating electrical load with a minimum of 10% of useful volume remaining in the tanks(s). The useful volume is defined as 95% of the internal volume of the tanks.
- 541-2.3 [RFP] Service tanks shall be sized per the requirements of [ABS HSNB 4-6-4/13.5.1d](#) with the exception that each service tank shall have a capacity of 4 hours at MCR of the propulsion plant and simultaneous operation of one generator while supplying the normal operating electrical load with a minimum of 10% of useful volume remaining in the tank(s).
- 541-2.4 [RFP] The service tank for the Emergency Generator shall be sized for a minimum of 12 hours in accordance with COR Section 304 with a minimum of 10% of useful volume remaining in the tank(s).
- 541-2.5 [RFP] Tank(s) shall be fitted with a ball valve at the tank boundary. The valve(s) shall have fire-safe seats, body seals, and stem seals and shall have remote shutoffs at the main deck. The valves shall be located at or above the tank level. Suction lines shall be provided within the tank and run to the low point of the tank.
- 541-2.6 [RFP] If tanks are non-integral, they shall be secured to the hull structure and remain stationary relative to the hull under all load conditions.

541-3 [RFP] Fuel Filling and Transfer System

- 541-3.1 [RFP] The fuel filling and transfer system shall be sized and arranged such that the fuel receiving capability shall be not less than 950lpm (251gpm), starting with a completely empty fuel system and ending with all tanks filled to capacity without interruption of the filling process. Velocity limits shall comply with COR SECTION 505.
- 541-3.2 [RFP] A filling connection shall be provided on the main deck built into the forward deckhouse structure. A drip collection cofferdam shall be provided under the fuel filling station in accordance with COR Section 506-1.1. The cofferdam shall be connected to the fuel stripping system specified in COR Section 541-4.
- 541-3.3 [RFP] The filling connection shall be 3" IPS 150# flanged gate valve with the flange conforming to [ASME B16.5](#). The flange will be adapted to the filling service. The supplied adapters shall be compatible with USCG and DOD vessels, and shall accommodate either in-port or fueling-at-sea. Oil tight caps and chains shall be provided for each adapter.
- 541-3.4 [RFP] The installed fuel transfer system shall be connected to all service and storage tanks. The system shall operate at a minimum rate to allow one service

tank to be filled before the other service tank reaches 25% capacity when running all engines at full power continuously. The system must be capable of discharging to the deck filling connection. The pump(s) shall also be capable of taking suction on stripping system piping. The fuel transfer system shall be installed to ensure the pump(s) will not in any case operate at shutoff head.

541-3.5 [RFP] The transfer system shall provide fuel to the emergency diesel generator day tank.

541-3.6 [RFP] The fuel transfer system shall be controlled from a single-manifold control station within the FRC-B. Tank level indicators shall be provided for each fuel tank with readouts at the control station. All indicators shall continuously indicate the tank levels.

541-4 [RFP] Tank Stripping System

541-4.1 [RFP] One fuel stripping system shall be provided. The fuel tank(s) and drip collection cofferdam, specified in COR Section 541-3.2, shall be connected to the stripping system and arranged so that water can be stripped from each location. The lines shall take suction from the lowest position in the tank. In addition to the pump requirements of COR Section 541-3.4, a hand powered rotary pump shall be installed for tank stripping.

541-5 [RFP] Fuel Oil Priming Pump

541-5.1 [RFP] A hand operated pump shall be installed for priming each propulsion and generator engine.

541-6 [RFP] At-Sea Refueling System

541-6.1 [RFP] The FRC-B at-sea refueling system shall be designed and installed so that the FRC-B is refueled when towed astern of the vessel providing fuel using a 1-1/2 inch hose and quick-release coupling.

541-6.2 [RFP] CAM-LOC type fittings shall be provided to accommodate fueling of the FRC-B both inport and underway. A list of required CAM-LOC fittings is included in COR [Section 600](#).

541-7 [RFP] Cutter Boat Fueling Station

541-7.1 [RFP] A station near the Cutter Boat stowage shall be provided with the associated hose and fittings to enable refueling of the Cutter Boat via the fuel oil service system. A fueling station pump with emergency shut down capability shall be provided. The pump shall take suction from the fuel oil service header. A cofferdam shall be provided at this filling station. The hose shall be long enough to refuel the Cutter Boat while it is waterborne alongside the FRC-B, abeam of the fueling station, and also in the stowed position.

SECTION 551. [RFP] SHIP'S SERVICE COMPRESSED AIR SYSTEM**551-1 [RFP] Definitions**

- 551-1.1 [RFP] Air receiver – A pressure vessel for storing compressed air at 41.4bar (600 PSI) and below.
- 551-1.2 [RFP] Moisture separator – A pressure vessel designed to remove entrained liquid contaminants from compressed air passing through it.
- 551-1.3 [RFP] Medium pressure air system – A system which is designed for a nominal operating pressure of 10.4bar to 69bar (151 PSI to 1,000 PSI).
- 551-1.4 [RFP] Low pressure air system – A system which is designed for a nominal operating pressure of 10.3bar (150 PSI) and below.
- 551-1.5 [RFP] Standard cubic foot per minute (scfm) – A cubic foot of air at a temperature of 20°C (68°F), a pressure of 101kPa (14.7 PSI) absolute, a relative humidity of 36%, and thus a density of 1.2kg/m³ (0.0750 lb/ft³).
- 551-1.6 [RFP] Ship service air system – A term commonly used to denote a cutter's low pressure air system.

551-2 [RFP] General

- 551-2.1 [RFP] This section contains the general requirements for all compressed air systems, as required or otherwise provided.
- 551-2.1.1 [RFP] A low pressure (LP) ship's service compressed air system shall be provided.
- 551-2.2 [RFP] General piping systems and component requirements are covered in COR SECTION 505.
- 551-2.3 [RFP] Air systems shall be arranged and sized to supply all required services at the quantities and pressures required, up to the total demand of the services which will be operating simultaneously.
- 551-2.4 [RFP] The arrangement for the air supply to all air compressors shall be such as to preclude entry into the compressor of combustible vapors, smoke, dirt, grit, water or other contaminants, or air at 38°C (100°F) or above for centrifugal compressors and air at 49°C (120°F) or above for other types of compressors.
- 551-2.5 [RFP] The air supply shall be taken from the compressor compartment or from the weather, as appropriate, to meet the requirements herein.
- 551-2.6 [RFP] For piping and components installed in the weather, the air dew point shall not exceed minus 40°F at line pressure.
- 551-2.7 [RFP] A relief valve, check valve, and stop valve, in that order, shall be provided immediately downstream of each air compressor, if these components are not provided by the compressor manufacturer(s).
- 551-2.8 [RFP] Air filters shall be provided as necessary in the service air systems to meet the filtration requirements of the supported services.
- 551-2.9 [RFP] Pressure switches, which control air compressors automatically, shall be actuated by the discharge pressure of the compressor.

- 551-2.10 [RFP] In systems where a medium pressure air compressor supplies one receiver, the control line to the pressure switch shall be taken off downstream of the receiver bypass and receiver discharge valves.
- 551-2.11 [RFP] In systems arranged such that more than one plant receiver is installed close to the compressor, the control line shall be taken off downstream of the most remotely located receiver bypass and receiver discharge valves.
- 551-2.12 [RFP] Each system shall be complete in all respects, with gauges, valves (stop, check, relief, reducing), drainage arrangements, pressure controls, flasks, receivers, strainers, filters, and separators.
- 551-2.13 [RFP] Piping connections to resiliently mounted equipment shall contain flexible connections in accordance with COR Section 073 and SECTION 505.
- 551-2.14 [RFP] Piping shall be arranged to eliminate pockets where moisture may collect.
- 551-2.15 [RFP] Where pockets or low points are unavoidable, valved drains shall be provided at the pockets. Dead end piping shall be kept to a minimum.
- 551-2.16 [RFP] Means shall be provided to prevent excessive temperature due to rapid compression.
- 551-2.17 [RFP] The piping shall be located to take advantage of all the protection which may be available, such as bulkheads, trunks, and other structures.
- 551-2.18 [RFP] Valves shall be installed to permit isolation of damaged portions of the systems and to provide maximum flexibility in operation.
- 551-2.19 [RFP] Cutout valves shall be provided for each compressor source supply connection to each compressed air main, and in the main on both sides of each source supply connection.
- 551-2.20 [RFP] Cutout valves shall be provided in each service branch line at the takeoff from the main.
- 551-2.21 [RFP] Air systems shall be provided with means for bleeding down for repair purposes.
- 551-2.22 [RFP] Drain line terminals on moisture separators, and receivers shall be located so that the discharge is clearly visible to the operator of the drainage valve.
- 551-2.23 [RFP] Unless otherwise specified herein, relief valves in piping systems shall be set in accordance with the criteria delineated in COR SECTION 505.
- 551-2.24 [RFP] Discharge piping from relief valves shall be directed so as not to damage machinery or equipment, or to endanger personnel.
- 551-2.25 [RFP] A pressure pulsation dampener shall be installed in gauge lines in accordance with COR SECTION 504.
- 551-2.26 [RFP] Means shall be provided to bleed air from hoses, which contain air at pressures above 8.6bar (125 PSI), prior to disconnecting.

551-3 [RFP] Medium Pressure Air Systems

- 551-3.1 [RFP] Medium pressure air compressors.
- 551-3.1.1 [RFP] Two medium pressure air compressors, if provided, shall be of commercial grade, marine construction to meet the compressed air requirements for starting air, low pressure ship service, and control air.

- 551-3.2 [RFP] Air receivers.
- 551-3.2.1 [A009] Air receivers, if provided, shall comply with [46 CFR 54](#), [ABS HSNB](#), [4/4 Pressure Vessels](#), and [ASME Boiler and Pressure Vessel Code](#) as may be applicable.
- 551-3.2.1.1 [RFP] Cutout valves in the inlet and outlet connections and a bypass with a valve shall be provided for each receiver.
- 551-3.2.1.2 [RFP] Receivers shall be provided with pressure gauges and relief valves.
- 551-3.2.1.3 [RFP] The relief valve shall be installed as close as practicable to its connection on the receiver shell without intervening valves or piping branches.
- 551-3.2.1.4 [RFP] A manual drainage connection shall be provided on each receiver at the lowest point.
- 551-3.2.1.5 [RFP] If the receiver is installed in a vertical position, the bottom shall be convex to insure complete drainage.
- 551-3.2.1.6 [RFP] If the size of the receiver permits, a 280mm x 380mm (11 in x 15 in) oval manhole shall be provided for access to clean the interior; otherwise a sufficient number of handholes shall be provided to permit complete cleaning of the interior.
- 551-3.2.1.7 [RFP] The air dew point in receivers shall not exceed 1.7°C (35°F) at the relief valve set point.
- 551-3.3 [RFP] Arrangements and services.
- 551-3.3.1 [RFP] Medium pressure air, if provided, shall be supplied, as required, to the services specified.
- 551-3.3.1.1 [RFP] Diesel engine starting air system.
- 551-3.3.1.2 [RFP] Low pressure service air system pressure reducing station.
- 551-3.4 [RFP] Starting air systems.
- 551-3.4.1 [RFP] For diesel engines which require compressed air for starting, air shall be provided from the medium pressure air system via starting air receivers and a reducing manifold if necessary.
- 551-3.4.2 [RFP] Air piping between the starting air flasks and the engine shall have sufficient flexibility to withstand the vibrations resulting from normal operation of the unit.
- 551-3.5 [RFP] Ship service diesel generator engines.
- 551-3.5.1 [RFP] See COR SECTION 502 for starting air systems for ship service generator diesel engines.
- 551-3.6 [RFP] Propulsion diesel engines.
- 551-3.6.1 [RFP] See COR Section [233](#) for starting air systems for propulsion diesel engines.
- 551-3.7 [RFP] Low pressure (LP) air systems.
- 551-3.7.1 [RFP] Arrangements, detailed requirements and services.

551-3.7.1.1 [RFP] General.

551-3.7.1.1.1 [RFP] The low pressure air system, shall provide compressed air at 8.6bar (125 PSI) from the medium pressure air system through a pressure reducing station via a service air main, and branches to air user services. If a medium pressure air system is not provided, the LP air system shall be supplied by a commercial grade compressor.

551-3.7.1.1.2 [RFP] Filters and strainers, capable of removing contaminants down to the smallest size which can adversely affect the functioning of the equipment served, shall be installed, as required.

551-3.7.1.1.3 [RFP] The discharge lines between compressors and receivers shall be as short and as free from bends as practicable.

551-3.8 [RFP] Service air.

551-3.8.1 [RFP] The service air main, if provided, shall supply air for systems and equipment, including, but not limited to:

551-3.8.1.1 [RFP] Pneumatic valves and controls associated with the propulsion plant.

551-3.8.1.2 [RFP] Stern tube seals.

551-3.8.1.3 [RFP] Sea chest blow downs.

551-3.8.1.4 [RFP] Inflatable stern tube seals (if provided).

551-3.8.1.4.1 [RFP] LP air shall pressurize the inflatable stern tube seal(s) via separate branch lines to the port and starboard inflatable seals.

551-3.8.1.4.2 [RFP] Each branch supply line shall be provided with a cutout valve and a portable hose connection, located as close to the associated stern tube seal as practicable.

551-3.8.2 [RFP] The service air main shall supply air at required pressures for low pressure systems and equipment including, but not limited to:

551-3.8.2.1 [RFP] Engine Room retractable hose reel and minimum 5/8 inch diameter hose of sufficient length to reach anywhere in the engine room.

551-3.8.2.2 [RFP] Port and Starboard Main Deck service supplies.

551-3.8.2.3 [RFP] Blowing out sea chests with centrally located outlets so that each can serve as many sea chests as practicable.

551-3.8.2.4 [RFP] The following shall be installed at each outlet in this order. A needle valve, a stop-check valve gauge, a relief valve set at 275 kPa (40 PSI), a bleed off connection, and a capped hose connection.

551-3.8.2.5 [RFP] A label plate shall be installed near the needle valve, inscribed as follows:

"CAUTION - DO NOT PERMIT PRESSURE TO EXCEED
35 POUNDS WHEN BLOWING-OUT SEA CHEST."

551-3.9 [RFP] Moisture separators for compressor discharge.

551-3.9.1 [RFP] Moisture separators serving the compressor discharge, where required, shall be installed as close as practicable to the compressor

SECTION 555. [RFP] FIRE EXTINGUISHING SYSTEMS**555-1 [RFP] General**

555-1.1 [RFP] The fire fighting systems shall consist of the following installed fixed systems: Fire Main, FM-200®, Magazine sprinkling, R-102, and AFFF. Portable and AFFF fire extinguishers shall also be provided. The combination of systems shall be designed to deliver the various extinguishing agents required for all classes of shipboard fires. The systems shall provide for protection as shown in Table 555-1.

Table 555-1

Compartments	Protection					
	Fire Hoses	Fire Extinguishers	Magazine Sprinkling	FM-200®	R-102	AFFF
Pilot House	X	X				
Galley	X	X			X	
Accommodations	X	X				
Ammo Stowage	X	X	X			
Engine Room	X	X		X		X
Generator Room (if provided)	X	X		X		X

555-1.2 [RFP] The fire main shall be a dry type. Fire stations shall be installed such that any part of the vessel can be reached from at least two fire stations with a single length of 50 ft. hose.

555-1.3 [RFP] Halon systems are prohibited.

555-1.4 [RFP] The "Fixed" AFFF system shall provide 100% blanketing of machinery space bilges from outside the space. The fire main system shall provide the AFFF from portable cans through portable eductors to a fixed flooding system.

555-2 [RFP] Portable Fire Extinguishers

555-2.1 [RFP] Portable fire extinguishers with mounting brackets shall be supplied as follows as a minimum:

Table 555-2

Space/Component	SIZES REQUIRED			
	No.	Type	CO ₂ , Lbs	PKP, Lbs
Each habitable space over 8m ²	1	B-I	Either Type	
Crew Passageway	1	B-I	Either Type	
Galley	1	B-II		18
Propulsion Machinery Space	3	B-II		18
Propulsion Machinery Space	1	B-II		15
Auxiliary Machinery Space (outside the space near the exit)	1	B-II		18

Adjacent to Each Generator	2	B-II	15	
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- 555-2.2 [RFP] One spare extinguisher of each type carried on board shall also be provided. Type B-II CO2 extinguishers shall be 15 pound CO2 extinguishers meeting [MIL-E-24269B](#) with non-shatterable cylinder, squeeze grip control, and nonmetallic hose and horn. Type B-II PKP extinguishers shall be 18 pound PKP extinguishers meeting [MIL-E-24091C](#).
- 555-2.2.1 [RFP] Type B-II PKP Portable Fire Extinguishers shall use dry chemical meeting [MIL-E-24091C](#), be field rechargeable, have a UL rating 120-BC USCG Rating – BC Size IV, and be supplied with a mobile vehicle type mounting bracket.
- 555-2.2.2 [RFP] Type B-II CO2 Fire Extinguishers shall be 15 pound CO2 extinguishers meeting [MIL-E-24269B](#) with non-shatterable cylinder, squeeze grip control, and nonmetallic hose and horn..
- 555-2.3 [RFP] Extinguishers shall be mounted a minimum of 60 mm (2.3 in) above the deck. They shall be located in a place readily accessible outside the compartment they are intended to serve. Where the compartment served by the extinguisher exits to the weather deck, the extinguishers shall be as close to the access in the space as practical.

555-3 [A009] Fixed Heptafluoropropane Total Flooding System

- 555-3.1 [A009] A Coast Guard Type Approved (Approval Series 162.161) engineered Marine Fixed Heptafluoropropane Fire Suppression System shall be provided to protect the engine room and auxiliary machinery rooms. (Note: Heptafluoropropane is a gaseous agent and is an acceptable HALON 1301 and CO2 replacement for compartment total flooding systems.)
- 555-3.1.1 [RFP] Separate compartments shall have independent systems. Storage cylinders shall be in a well ventilated compartment located outside of the protected space. Each system shall be sized to provide two (2) complete discharges.
- 555-3.1.2 [A009] Actuation Stations – The Fixed Heptafluoropropane Fire Suppression System shall be capable of local and remote actuation using a lever on the control head and remote actuation outside the protected compartment primary access and in the pilothouse.
- 555-3.1.3 [RFP] Time Delays – The system shall have a time delay device, with bypass, which shall allow personnel to evacuate the compartment and allow equipment to secure prior to discharge of the extinguishing agent into the compartment.
- 555-3.1.4 [A009] Piping – The Fixed Heptafluoropropane Fire Suppression System distribution and control piping shall be shall be 304L CRES. All pipe and fittings shall be welded.
- 555-3.1.5 [RFP] Audible Alarm – An audible discharge alarm shall be provided by the equipment manufacturer for the engine room and auxiliary machinery room.
- 555-3.1.6 [RFP] Visual Alarm – A visual discharge alarm consisting of a minimum of two red strobe lights shall be provided for the engine room and auxiliary machinery room. The strobe light shall be a type approved by the manufacturer for use as a shipboard alarm device, and shall light upon actuation of the system.

555-3.1.7 [RFP] Instruction, Warning and Label Plates – Plates shall be provided to provide instruction and warning to personnel regarding the use of the fixed fire fighting system. Label plates shall be provided immediately adjacent to each cylinder, actuator, time delay, pressure switch, and pneumatic stop valve for identification of the item.

555-3.2 [RFP] The Equipment Manufacturer shall supply system engineering reports for each space which include calculations and drawings to demonstrate that the requirements of this COR have been met. ([CDRL 085-510](#)).

555-4 [RFP] Galley R-102 Fire Fighting System

555-4.1 [RFP] An R-102 fire fighting system meeting the requirements of [NFPA 17A](#), National Fire Protection Association: Standard for Wet Chemical Extinguishing Systems, shall be installed in the galley.

SECTION 556. [RFP] HYDRAULIC SYSTEMS**556-1 [RFP] General Requirements**

- 556-1.1 [RFP] Except as modified by this section, fluid power and control systems shall be in accordance with either [46 CFR 58.30](#) and 4-6-6/3 of the [ABS HSN C Guide](#) or [NAVSEA S9AA0-AA-SPN-010/GENSPEC](#), Section 556. [SAE J1784](#), Specifications and Standards for Marine Hydraulic Systems and Components, Information Report, may be used for guidance. Analyses shall be performed and supporting calculations shall be provided for all hydraulic systems of the FRC-B to ensure that each system meets the performance requirements of the COR. ([CDRL 085-510](#))
- 556-1.2 [RFP] One hydraulic fluid shall be selected for use in all FRC-B hydraulic systems. The hydraulic fluid shall be a petroleum base fluid. Hydraulic fluid shall be selected for both cold iron startup and normal operating conditions. Equipment operation cycles are typically uncontrolled and systems will frequently be in cold-iron condition until service is required. Once operating, equipment may run continuously for extended periods in no flow condition or in active use condition. The oil selected shall be commercially available worldwide and meet the requirements of [DIN 51524-2](#) (or [DIN 51524-3](#) if low temperature viscosity requirements need to be met). A Material Safety Data Sheet (MSDS) in accordance with [29 CFR 1910.1200](#) OSHA is required for the fluid. ([CDRL 077-004](#))
- 556-1.3 [RFP] The ISO contamination level to be maintained shall be defined for each hydraulic system to achieve the design service life of equipment. Information plates shall be installed adjacent to each fluid filling opening identifying the system, fluid and filtration level. The contamination level shall not exceed [ISO 4406 18/15](#).
- 556-1.4 [RFP] All hydraulic fluid shall be filtered to at least the cleanliness requirements of the system into which it is being added as part of the installation process.
- 556-1.5 [RFP] The systems' cleanliness shall be maintained by installed filtration equipment. The following filtration shall be used: Cleanable wire strainers in pump suction lines from reservoirs. Filters shall be installed in the discharge lines of all pumps. Filters shall be installed in all case drains, return lines and fill lines to reservoirs. Filters shall be installed in supply lines to contaminant sensitive components (e.g. servo valves and pilot control valves), unless such components are in close proximity to the main supply line filter. Filtration capacity (flow rate) shall be based upon the peak flow rates which could occur (not necessarily the pump capacity), and shall take into account fluid viscosity under both normal and cold-iron start-up conditions. Reservoirs shall be equipped with removable magnetic elements to trap and retain ferrous particles. Filters shall be readily accessible and all filter elements shall be easily removable for servicing without draining of system. Filter element condition indicators shall be plainly visible by crew personnel.
- 556-1.6 [RFP] Gauges shall comply with COR SECTION 504. Gauge installations shall include use of root valves, gauge cocks and pressure snubbers. Pressure gauges shall not be installed directly in piping. Thermometers shall be installed in reservoirs and on both sides of oil coolers.

- 556-1.7 [RFP] Hydraulic systems shall be cleaned, flushed, tested and protected in accordance with [MIL-STD-419](#). The manufacturer specified cleanliness levels shall be achieved and maintained. No welding, chipping, cutting, grinding or burning work shall be accomplished in the compartment with or in the vicinity of an open hydraulic system. Provisions shall be made for breaking installed hydraulic systems into manageable sections, and for temporary installation of necessary equipment and jumpers for flushing.
- 556-1.8 [RFP] Cadmium shall not be used where it will be in contact with hydraulic oil.
- 556-1.9 [RFP] Nodular cast iron and carbon steel shall be limited to such components as pump bodies, hydraulic motors, and valve bodies. Such components shall be coated to minimize external corrosion.

556-2 [RFP] System Performance and Arrangements

- 556-2.1 [RFP] Dedicated hydraulic power units shall be provided for each hydraulic system. Individual equipment shall be supported at rated load and rated speed. A pressure reserve of not less than 15% shall be provided. Potential concurrent usage shall be addressed. The hydraulic systems shall support working with rated loads at design sea states (COR [Section 070](#)) and the conduction of dynamic testing of the systems with factored test loads without adjustment of hydraulic pressure.
- 556-2.2 [RFP] Equipment reliability and maintenance, cutter manning and any requirement for secondary power sources in case of hydraulic power unit (HPU) failure must be considered in systems design. Secondary power sources for systems other than steering and controllable pitch systems shall be intended for equipment recovery and emergency operation only, and shall not be required to provide flow to achieve 100% equipment rated function speeds.
- 556-2.3 [RFP] System capacity and performance shall consider pilot drainage, valve spool drainage, case drainage and valve leakage as additive to the performance requirements. Where performance requirements represent the normal operating condition, the hydraulic system capacity shall have an additional power capacity of not less than 5%.
- 556-2.4 [RFP] Equipment selection and installation shall minimize impact of equipment generated noise and vibration on shipboard operations. Noise levels shall meet the requirements of [SAE J1782](#). Hydraulic power units shall be compound mounted.

556-3 [RFP] Design Requirements

- 556-3.1 [RFP] The maximum operating pressure of general service hydraulic systems shall not exceed 17.5MPa (2,538 PSI). The maximum operating pressure of self-contained hydraulic systems of manufacturer standard design shall not exceed 25MPa (3,626 PSI).
- 556-3.2 [RFP] The design pressure of hydraulic systems shall not be less than the nominal set pressure of the system relief valve for that portion of the system. Relief valve settings shall be based on the maximum operating pressure in accordance with [NSTM Chapter 556](#), Section 4, 1997. Equipment subject to high external loading shall be protected by a relief valve or burst disk system sized for the extreme flow condition.
- 556-3.3 [RFP] Hydraulic transients shall be included in determining the design and test pressures. The transients shall include rapid valve opening and closing,

overhauling loads, suddenly applied loads, and relief valve response time. Similarly, pressure intensification due to the differential area of a component shall include cases where hydraulic valves can be inadvertently closed. Transients shall be minimized wherever practicable. For frequently occurring transients the design pressure selected shall be such that the maximum system pressure which can occur is not more than 90% of the hydrostatic test pressure. For repetitive transients not limited by relief valves, the transient pressure calculated in excess of 20% of the maximum operating pressure shall be added to the maximum system operating pressure to determine the minimum design pressure. For repetitive transients limited by relief valves, transients which do not result in maximum system pressures greater than the relief valve full flow differential pressure may be ignored.

556-3.4 [RFP] The temperature of hydraulic fluid shall be maintained below 60°C (140°F).

556-3.5 [RFP] Control valves shall be tapered-spool valves.

556-4 [RFP] Piping and Fittings

556-4.1 [RFP] Piping, including fittings, shall be in accordance with COR SECTION 505, [46 CFR Subchapter F Part 58](#), 4-6-6/3.5 of the [ABS HSNC](#) Guide, and this Section.

556-4.2 [RFP] Components shall be compatible with CRES.

556-4.3 [RFP] Piping and pipe connections shall be held to a minimum by manifolds valves with related functions. Manifolds shall include but not be limited to the use of sectional valve, subplate valve mounting, stacked valves and junction blocks. Manifold valves shall be structurally mounted.

556-4.4 [RFP] Threaded connections shall be SAE straight thread union with "O" ring seal. NPT, BSP and other tapered thread fittings and tube connections shall not be used.

556-4.5 [RFP] Hydraulic piping and tubing connections shall be welded or mechanically attached fittings in accordance with [ASTM F1387-99](#).

556-4.6 [RFP] Hydraulic hose connections to piping shall be O-ring seal type.

556-5 [RFP] Components

556-5.1 [RFP] Valves

556-5.1.1 [RFP] Valves may be pilot operated to maintain operating devices such as solenoids, cams and levers at a minimum size. No valve shall operate improperly due to back pressure or surges. Valve operation shall be such as to prevent detrimental surges and shock in the hydraulic system.

556-5.1.2 [RFP] Provision shall be made for locking and/or sealing adjustable valves at service adjustment to prevent tampering. Manually adjustable flow and pressure control valves shall be equipped with an adjustment verification system; valves with a rising stem shall be equipped with a band and micrometer based marking system, valves with a dial indicator shall be equipped with a marked dial band.

556-5.1.3 [RFP] Valves with related functions shall be installed in a manifold. Integrated hydraulic circuits are preferred over separately mounted control circuit components.

- 556-5.1.4 [RFP] Valves shall be permanently marked to indicate proper connection in the system; directional arrows shall be used.
- 556-5.1.5 [RFP] Valves shall be accessible for maintenance, repair and replacement. Manifold and subplate type valves are preferred for maintenance purposes. In-line, welded valves shall be modular in construction for removal and replacement of operating components. Manifold valves shall be individually replaceable. Valves within junction blocks shall be removable cartridge type only; junction blocks with non-replaceable valve body elements will not be accepted.
- 556-5.1.6 [RFP] Bypass or unloading valves shall operate without exceeding 175 KPa (25 PSI) pressure drop across the valve, unless otherwise specified. Throttling shall be minimized.
- 556-5.1.7 [RFP] Pressure control valves and check valves shall be damped to eliminate hydraulic squeal and chatter at all rates of flow up to the maximum design rate. Relief valves shall be adjustable and shall be set to begin opening at 110% of operating pressure, unless otherwise specified. Relief valves shall be set by a flow test of at least 80% of expected flow unless an alternate procedure has been approved by the Coast Guard. When relief valves are set, tags shall be attached to the valves which include activity name, date, and conditions under which set.
- 556-5.1.8 [RFP] Hydraulic control valve spools shall be encased, oil bathed carbon steel. Control valves with through flow bypass shall have metering chamfers on both working and bypass spool edges.
- 556-5.1.9 [RFP] Seals and seal glands shall comply with [MIL-HDBK-2193](#).
- 556-5.1.10 [RFP] Valve material and design shall minimize corrosion from water vapor. Valves in the weather shall have CRES spools and shall have fully booted stems.
- 556-5.1.11 [RFP] Where isolation or other maintenance valves which are occasionally used must be operated in sequence, warning tags shall be attached to all related valves.
- 556-5.1.12 [RFP] [MIL-V-24695](#) compliant or equivalent commercial marine test, vent, and sampling valves shall be installed throughout all hydraulic systems. The valves shall be designed for connect and disconnect with the fluid system under pressure, without leakage. Openings, when not in use, shall be capped. Test valves should be installed where venting is required. To facilitate detailed diagnostics without shut-down of the systems, test valves should be installed on both sides of major components including pumps, motors, regulator valves, control valves, cylinders and filters.
- 556-5.1.13 [RFP] Relief valves shall be set in accordance with [NSTM Chapter 556](#), Section 4. Equipment subject to high external loading shall be protected by a relief valve or burst-disk system sized for the extreme flow condition.
- 556-5.2 [RFP] Hydraulic Power Unit(s) and Controls
- 556-5.2.1 [RFP] Hydraulic power unit(s) (HPU) shall include the electric motor, pump, reservoir and all necessary controls. Engine driven and power take-off (PTO) driven hydraulic units can also be used. If fitted, electric motors for the HPU shall be 440VAC 3PH 60HZ.

- 556-5.2.2 [RFP] A local control panel shall be provided for each HPU. The control panel shall include all controls necessary for the operation of the unit; remote/local system control selection, pressure and temperature gauges as necessary for normal operation, and alarms for low reservoir level, system failure and filter service. The panel shall also include on/off control and status indication of reservoir heaters. The control panel may form a part of the equipment control panel when adjacent to the supported equipment.
- 556-5.2.3 [RFP] For the steering gear, the first remote level of control shall be in the pilot house, see COR [Section 201](#). For the transom doors, if provided, the first remote level of control shall be at the stern notch. Remote control disconnect capability shall be provided. Direct weather deck mechanical control of hydraulic systems shall not be installed. Weather deck remote control stands for systems shall utilize electric remote control and digital pressure indication, to reduce corrosion and maintenance problems.
- 556-5.2.4 [RFP] Grease fittings or provisions for lubrication shall be provided for all bearings not lubricated by an oil bath or hydraulic oil.
- 556-5.2.5 [RFP] Hydraulic pump controls shall start pumps hydraulically unloaded.
- 556-5.2.6 [RFP] Emergency "E-STOP" switch devices shall be provided in strategic control locations for all systems supporting weight handling or weather deck equipment. "E-STOP" switch devices shall be protected from accidental operation by lift to access bezel, raised bezel shroud, or similar device. HPUs shall not automatically reset and restart when an E-Stop is returned to neutral position.
- 556-5.3 [RFP] Pumps and motors
- 556-5.3.1 [RFP] Pumps and motors shall be approved by the manufacturer for the service intended and the environment in which they are used. Pumps and motors shall have a Rated Static Pressure (RSP) of not less than 1.7 times the system design pressure and a Rated Fatigue Pressure (RFP) of not less than 1.35 times the system design pressure. National Fluid Power Association (NFPA) standards [T3.9.22](#) and [T2.6.1](#) may be used for guidance in the determination of these ratings. Pumps and motors shall have a service life of not less than 10,000 hours under varying load conditions.
- 556-5.3.2 [RFP] All materials shall be suitable for the purpose intended. Cast iron shall not be used in any application. Nodular iron and "mechanite" casting may be used for pump and motor cases, end caps, covers, bases and similar items; cases, end caps, covers, bases and similar items shall not be aluminum.
- 556-5.3.3 [RFP] Pumps and motors shall be flange or bracket mounted. Bearings shall be rolling contact type throughout; special bearings may be used for rotating elements of piston pumps. The use of bushings shall be limited to control shaft type applications. Pumps and motors shall have ports terminating in bosses cast or machined in the case or cover. Except for gauge ports, all other porting shall be ISO standard straight thread connections with O-ring seal, or O-ring seal flange connections. Tapered thread bosses with adapters are not acceptable. The ports shall be sized consistent with the fluid flow requirements for piping.
- 556-5.3.4 [RFP] Pump and motor efficiency shall be presented in accordance with [NFPA T.3.9.17](#). The volumetric efficiency of pumps and motors shall be not

less than 90 percent, and the mechanical efficiency of pumps and motors shall be not less than 85 percent under full load conditions.

- 556-5.3.5 [RFP] Variable delivery pumps shall have provision for both manual and automatic control of the stroking system. Variable delivery pumps in single direction service shall be arranged to prevent stroking in the opposite direction. Pressure compensated pumps shall be externally adjustable.
- 556-5.3.6 [RFP] The power rating of equipment driving hydraulic pumps shall be at least continuous duty service at the power level necessary for the hydraulic pump to meet the worst case, peak performance condition required, without the driver overheating or in overload condition.
- 556-5.4 [RFP] Cylinder and Ram Assemblies
- 556-5.4.1 [RFP] Ram rods shall be 17-4 PH CRES or material with equal corrosion resistance. Cylinder rods shall be fitted with a wipers and dual packings. Cylinders in the weather shall be fitted with dual wipers. Leakage and drain connections shall be included, as necessary. Where necessary, cylinder design shall include internal buffers or dashpots as an aid in decelerating parts attached to the piston or ram. Hydraulic cylinders shall be NFP(A).
- 556-5.4.2 [RFP] Seals shall become more effective with an increase in pressure. Piston rings shall not be used as a primary seal. Piston seals shall be of zero-leakage design.
- 556-5.4.3 [RFP] Weather deck equipment shall be designed so that rams and cylinders stow with the rod retracted and protected from the weather, and shall be fitted with flexible boot material. Boots shall be arranged to self-ventilate and drain, and shall be easily removable for inspection and maintenance.
- 556-5.4.4 [RFP] Rams shall be constructed to NFP(A) standards, to the extent practical, and their design shall permit replacement of seals and packing by FRC-B personnel. Special tools necessary for the installation of seals and packings shall be provided.
- 556-5.4.5 [RFP] If fluid power hydraulics are provided for a Cutter Boat stern launch notch door(s), the system shall have a fail-safe system to ensure that the door(s) can not inadvertently close in the event of failure.
- 556-5.5 [RFP] Reservoirs
- 556-5.5.1 [RFP] Reservoirs shall be of CRES construction, and shall have bolted hand hole access for cleaning. The design shall maintain the fluid level at an effective working height and allow air and foreign matter to separate out. Provisions shall be made to minimize aeration. Pump suction shall prevent pump cavitation and starvation.
- 556-5.5.2 [RFP] Fluid reservoirs shall be designed and sized to provide adequate system fluid replenishment, cooling and aeration. The capacity of the reservoir shall be not less than 125% of the total volume of fluid contained in the whole system.
- 556-5.5.3 [RFP] Reservoirs shall support quick connection of portable filter units for filtering, filling, drainage, and recirculation of oil. Reservoir design pressure shall be satisfactory for the system served as well as portable filter units with the reservoir vent blocked. A fixed safety device may be provided to protect the reservoir from over-pressurization. Fill connections shall prevent foreign

matter from collecting around the sealing cover. Provision shall be made for emergency fill via funnel and filter screen of 180 mesh.

556-5.5.4 [RFP] Fluid level shall be indicated external to reservoirs, and be visible at acute viewing angles. Sight-glasses subject to damage and bulls-eye type indicators which are difficult to read are not acceptable. Reservoirs and storage tanks shall not be open to atmosphere. A filter dryer vent shall be installed to allow tanks to breathe. Reservoir venting systems shall prevent over-pressurization from fluid surges resulting from changes in system loads.

556-5.5.5 [RFP] The FRC shall have an installed oil reservoir to support recharging of the steering gear, and recharging of controllable pitch propulsor systems (if provided). If dual or split reservoir HPUs are provided the oil reservoir need not be provided. Where controllable pitch propulsor systems are provided, a purifier system shall be provided.

556-5.6 [RFP] Heat Exchangers

556-5.6.1 [A010] Tube and shell or plate type Heat Exchangers shall be provided as necessary in order to maintain hydraulic fluid in reservoirs below 60°C (140°F). Each heat exchanger shall be sized for 100% of the thermal load. Heat exchanger design shall prevent seawater contamination of hydraulic fluid. Heat exchangers shall be installed in accordance with manufacturers' recommendations for service, installation, cleaning and maintenance, and shall be installed with back flush capability. Plate type heat exchangers shall be titanium plate and shall be provided with a spray shield around the plate pack.

556-5.6.2 [RFP] Heat Exchangers shall be installed with a separate pump loop and thermostatic control. Thermometers shall be provided for determining inlet and outlet hydraulic fluid temperatures.

556-5.6.3 [RFP] Where the exchanger material differs from connecting pipes, waster pieces shall be installed to prevent galvanic action.

556-5.7 [RFP] Filters

556-5.7.1 [RFP] Filters shall comply with [SAE J2321](#). Dirt capacity shall be determined by SAE or ISO standard multi-pass methods. Filter ratings shall be based on Beta ratings. "Absolute" or other dated filter ratings shall not be used.

556-5.7.2 [RFP] The number of different types of filter element configurations used on the FRC-B shall be minimized to the extent practical. All elements shall have a Beta(10) ratio of at least 75.

556-5.7.3 [RFP] Primary filter element for use in return lines, fill lines, case drains and other general purpose pressure applications shall be a disposable, depth type filter per [SAE J2321-1](#). The collapse pressure shall be at least 1,000KPa (145 PSI) and the filters shall be intended for installation in housing with a bypass valve set to less than 300KPa (44 PSI) differential.

556-5.7.4 [RFP] Pressure type filters shall be used in pump discharges and other applications requiring a high collapse pressure. The collapse pressure shall be greater than the design pressure of the system and the filters shall be intended for installation in housings without bypass valve.

556-5.7.5 [RFP] Filter assemblies shall have a pressure rating of not less than the design pressure of the system in which installed.

- 556-5.7.6 [RFP] General purpose filter elements shall be installed in base plate mount, top loading canister type assemblies. Access to filters shall be via threaded plug or cap. Assemblies shall be equipped with a mechanical differential pressure indicator or differential pressure gauge to reflect relative dirt load status. The indicator shall indicate that service is required prior to the bypass condition. The service indicator shall be monitored and visually indicated on the HPU control panel. Provision shall be made for drainage of oil within the housing.
- 556-5.7.7 [RFP] Pressure type filters shall be installed in filter housings which do not have bypass relief. Pressure type filters in reversible flow systems shall be installed with check valve reverse flow protection for each element and installed to provide filtration in both directions. The housings shall be equipped with a mechanical differential pressure indicator or differential pressure gauge to reflect relative dirt load status. The indicator shall indicate that service is required prior to the bypass condition. The service indicator shall be monitored and visually indicated on the HPU control panel. A base plate mount, top loading canister configuration is preferred for the installation of high pressure filter elements.
- 556-5.7.8 [RFP] Documentation on filters shall be incorporated into technical publications. Salient features include size, type, dirt capacity and Beta rating of the filter.
- 556-5.8 [RFP] Accumulators
- 556-5.8.1 [RFP] Accumulators shall be the nitrogen charged type.

556-6 [RFP] Hydraulic System Diagrams

- 556-6.1 [RFP] Hydraulic System Diagrams shall be prepared in accordance with [SAE J1780](#) shall be provided for all hydraulic systems. ([CDRL 085-500](#)) The diagrams shall clearly indicate and identify maximum system operating pressures, system design pressures, and relief valve set pressures. All filters and their salient features shall be clearly identified on the system hydraulic diagram. Fluid velocities shall also be provided. Component manufacturer part numbers shall be provided. Hydraulic symbols on system diagrams and technical manuals shall be in accordance with [ASME Y32.10](#) as supplemented by [SAE AS 1290](#).

556-7 [RFP] Testing

- 556-7.1 [RFP] Hydraulic systems shall be tested in accordance with [SNAME T&R Bulletin 3-39](#).

556-8 [RFP] Maintenance

- 556-8.1 [RFP] The system designer shall establish the contamination and water content limit levels for all hydraulic systems, to meet manufacturer requirements. The contamination limits shall be documented in the system technical publications and on the hydraulic system diagrams. Hydraulic particulate contamination shall be described using [ISO 4406](#) contamination reporting levels. [SAE J1779](#) may be used for guidance in the determination of appropriate contamination levels.
- 556-8.2 [RFP] The contractor shall prepare, as part of system and equipment technical publications, maintenance plans to establish and maintain hydraulic fluid cleanliness. The maintenance plans shall include initial cleaning and flushing of

pipng, hoses and components; decontamination procedures; proposed schedule for fluid sampling; and establishment of flushing procedures with diagrams.

SECTION 561. [RFP] STEERING SYSTEMS**561-1 [RFP] General**

- 561-1.1 [A010] A hydraulic power assisted steering system capable of actuation from all command and control stations shall be provided, including the pilothouse console, open bridge (if provided), and bridge wings (if provided). The system shall be equipped with a full follow up system capable of actuation from each control station. Steering system controls and indicator lights shall be installed in the pilothouse. The system shall provide for emergency steering by manual effort alone.
- 561-1.1.1 [RFP] If waterjet propulsion is provided, steering shall be controlled by a directional jet nozzle and reversing bucket. For the purposes of this COR Section, any reference to a rudder shall apply to a jet nozzle and bucket, except where otherwise stated.
- 561-1.2 [RFP] If the steering system is designed with a speed reduction for the last 5° of travel to prevent slamming, the speed reduction shall not increase the time from hard over to hard over by more than 4 seconds.
- 561-1.3 [RFP] All parts of the system shall withstand the loads imposed by rudders or jet nozzles and buckets, as provided, hard over at full speed ahead and at full astern power without the use of hard stops.
- 561-1.4 [RFP] Not more than 1 hour of preventative maintenance (PM) and operating time shall be required for each 30 day period of nonuse to protect the system from deterioration.
- 561-1.5 [RFP] Each rudder shall have an actuator and shall be connected with a mechanical linkage. The linkage shall be arranged to permit adjustment of rudder toe in and out. The linkage shall be removable at sea to allow for independent operation of the rudders so that a casualty to one rudder does not preclude operation of the other rudder. Mechanical stops shall be fitted against the tiller arms to prevent the actuator from bottoming out. The stops shall be welded in place after final alignment of the rudders and tie rod(s), if fitted. Tie rod adjusters, if fitted, shall be provided with double nuts to prevent loosening after the final adjustment. Waterjets shall be provided with means to correct any splay or toe-in of the buckets from the pilothouse.
- 561-1.5.1 [RFP] If the hull design does not allow for a mechanical linkage connected to both rudders, the system shall be designed to be able to adjust the position of each rudder independently without affecting the position of the other. The system shall be designed so that the rudders are able to maintain their position relative to each other once the final adjustment is made.
- 561-1.6 [RFP] The steering system shall provide ease of steering from all control stations. The steering system shall be capable of moving, stopping, and holding the rudder at any angle within the operating range with the craft going ahead or astern at full power. If a wheel is provided, three to five turns of the wheel shall be required to move the rudder from stop to stop (i.e., hard right to hard left rudder). Clockwise rotation of the wheel or joystick shall turn the craft to starboard when moving ahead.
- 561-1.7 [RFP] The system shall be installed so that positive steering action will be obtained. If a wheel is provided, the wheel shall turn through no more than 15°

without moving the rudder. There shall be little or no deflection of the hull, foundations or any part of the steering gear, nor any misalignment of connected parts, due to steering loads.

- 561-1.8 [RFP] The helm assembly shall be installed so that it will have the necessary strength and rigidity to serve as a secure handhold for the helmsman. The helm assembly and its supporting structure shall be capable of supporting a minimum axial load of 840N (189 lbf) in any direction to the rim of the wheel or the end of the joystick handle. There shall be no permanent deformation of the helm assembly or its supporting structure or any malfunction of the steering system due to these loads. Structure shall be reinforced as necessary to meet these requirements.

561-2 [RFP] Steering Gear

- 561-2.1 [RFP] The steering gear shall employ a separate hydraulic system. Maneuvering requirements of the [ABS HSNC Guide](#) shall be met with a single hydraulic power unit on line. Steering systems shall be designed to operate continuously at peak loading condition. Hydraulic control of the rudder shall be continuously active to support automated steering control functions without hunting and hydraulic slamming. In the event of loss of control signal, steering control shall hydraulically lock.
- 561-2.2 [RFP] Each hydraulic power unit shall be driven by an electric motor driven pumps for FRC-Bs with rudders. Cross-coupling between hydraulic power units shall be provided so that any pump can provide the performance of the [ABS HSNC Guide](#). Engine driven hydraulic pumps for waterjets shall be variable stroke, automatically unloading types such that excessive hydraulic flow is not generated at full engine RPM.
- 561-2.3 [RFP] The steering gear is to be arranged so that after a single failure in its piping system the defect can be isolated, enabling full steering capability to be maintained or speedily regained.
- 561-2.4 [RFP] Waterjet hydraulics shall have separate alarms for loss of bucket control and steering control.
- 561-2.5 [RFP] Waterjet bucket controls for reversing shall not be driven from the steering hydraulic systems. They may be driven by the propulsion engine(s) provided that crossovers are provided to allow one propulsion engine to provide hydraulic pressure for all jets. A manual pump shall be provided to allow retraction of the reversing bucket(s).
- 561-2.6 [RFP] A split hydraulic reservoir shall be provided to supply both pumps with hydraulic fluid under normal operation. Upon loss of fluid in one circuit the reservoir shall retain 40% of the system volume and permit operation of the other pump circuit. Each side of the reservoirs shall be equipped with a low level alarm.

561-3 [RFP] Rudder Position Indicator System

- 561-3.1 [RFP] The rudder position indicating system shall comply with [COR Section 437](#).
- 561-3.2 [RFP] All rudder position indicators, including mechanical, shall be oriented spatially, or in direct correlation with the orientation of the actual rudder position.

561-4 [RFP] Lubrication

- 561-4.1 [RFP] Lubrication shall be provided to all bearings in accordance with the equipment manufacturer's requirements. Lubrication requiring grease shall be supplied by means of a central pressure feed system. Self lubricating bearings shall be oil-impregnated sintered bronze.

561-5 [RFP] Autopilot

- 561-5.1 [RFP] An autopilot with course computer and external alarm shall be installed. The autopilot shall integrate, at a minimum, with the gyrocompass (COR [Section 437-2](#)), DGPS (COR [Section 423-3.1.3](#)), and ECINS (COR [Section 425-1.1.7](#)).
- 561-5.2 [RFP] The autopilot shall be fully functional in the conditions described in COR [Section 070](#) at any speed.

561-6 [RFP] Emergency Steering

- 561-6.1 [RFP] A system for emergency manual steering independent of the installed hydraulic system shall be provided for the FRC-B. The system shall allow the FRC-B to be steered at least ten knots ahead and two knots astern by one person. The emergency steering system shall not be located on a weather deck.
- 561-6.2 [RFP] An instruction label plate shall be provided at the emergency steering station. Locations of items mentioned in the instructions shall be indicated if these are not readily apparent from the location of the label plate. Diagrams shall be used where they will simplify or clarify the information on the plate.
- 561-6.3 [RFP] The emergency steering station shall be provided with an electromagnetic compass repeater and a sound powered phone.
- 561-6.4 [RFP] Habitability for operators at emergency steering shall be taken into account in the design to allow for prolonged operation with minimal fatigue (i.e. seated position).

SECTION 562. [RFP] RUDDER**562-1 [RFP] Rudder**

- 562-1.1 [RFP] The geometry of the rudders shall be identical to that of the Parent Craft, unless changes are required to meet minimum maneuvering requirements.
- 562-1.2 [RFP] Seals and bearings shall be in accordance with [NAVSEA Dwg. No. 803-5001104](#). The rudder shall be assumed to be flooded for sizing of support components, if applicable.

562-2 [RFP] Rudder stock

- 562-2.1 [RFP] The rudder stock shall be of the same material as the propeller shafts (see COR [SECTION 243](#)). The surface roughness of the rudder stock shall not exceed 0.80 μm , measured in accordance with [ANSI B46.1](#).
- 562-2.2 [RFP] Rudder stock mechanical seals shall be provided. Rudder stock mechanical seals shall be a face and seat arrangement with the face having pressure applied for positive sealing. Seals shall be of the appropriate design for the intended application, in accordance with the manufacturer's recommendations.
- 562-2.3 [RFP] The Rudder stock shall be arranged so that the rudder and stock can be unshipped without disconnecting the crosshead or tiller from the ram assembly. Rudder shall be arranged to facilitate removal of propellers and shafting without unshipping the stocks or rudder.
- 562-2.4 [RFP] Maintenance on seals and inboard bearing shall be permitted without unshipping the rudder.
- 562-2.5 [RFP] Rudder seals shall be leak free. If the hull seal is located below the waterline, a mechanical face seal shall be employed. The hull seals shall be renewable without drydocking the ship or removing the rudder. The seal housing shall be renewable without removing the rudder, crosshead, tiller or rudder stock.
- 562-2.6 [RFP] Mechanical and chemical property certification shall be provided for rudder stock, pintles and palm bolts, if applicable. ([CDRL 562-001](#))

562-3 [RFP] Rudder Construction

- 562-3.1 [RFP] The rudders shall be faired airfoil section.
- 562-3.2 [RFP] The rudders may be cast aluminum, fabricated aluminum, fabricated 316L CRES or cast polyurethane potted 316L CRES. Cored FRP shall not be used. The rudder stock shall extend to the lowest diaphragm in a fabricated rudder or to the position of the lowest diaphragm in a cast aluminum rudder. Aluminum rudders shall not be used with a steel hull.
- 562-3.3 [RFP] The surfaces of the rudder shall be smooth and any welds, casting flaws, parting lines, or other flaws shall be ground smooth or otherwise corrected. Filler materials shall be the same as the rudder material - fairing compounds shall not be used.
- 562-3.4 [RFP] Cast polyurethane rudders shall be constructed as a single plate rudder with the polyurethane material extending beyond the plate. The thickness of polyurethane shall not exceed the minimum thickness recommended by the manufacturer of the polyurethane material.

562-4 [RFP] Rudder Bearings

- 562-4.1 [RFP] The rudder bearings shall be thermosetting, three dimensional cross-linked condensation polymers. Thrust bearings shall be provided as required to react to any vertical forces in the rudder on each stock such that the rudder is held down as well as up. Any bearing can be UHMW Polyethylene, Delrin, Teflon or other low friction polymers or oil-impregnated sintered bronze if not exposed to water. The bearings shall be fitted with grease lubrication if recommended by the bearing material manufacturer.

SECTION 568. [RFP] THRUSTERS**568-1 [RFP] General Requirements**

- 568-1.1 [RFP] If provided, tunnel thrusters shall be fitted with a replaceable CRES insert in the tunnel, in way of the propeller tips, to prevent erosion of the tunnel wall. Welding the replaceable sleeve to the tunnel wall is an acceptable means of installation. [ASTM F841-84](#) shall be used.
- 568-1.2 [RFP] Thrusters shall be fitted with inlet gratings.
- 568-1.3 [RFP] Rolling contact bearing L-10 life is to be 20,000 hours based on rated shaft rpm and maximum load.
- 568-1.4 [RFP] Seawater seals necessary to maintain water tightness of the cutter's machinery compartment should be serviceable with the cutter afloat.
- 568-1.5 [RFP] The balance and dimensional tolerances for the thruster propeller shall conform to [ISO 484](#).
- 568-1.6 [RFP] Thruster vibration limits shall comply with [ANSI S2.25](#), [ANSI 2.27](#), and [SNAME T&R Bulletin 2-29A](#) as appropriate.

SECTION 581. [RFP] ANCHOR HANDLING AND STOWAGE**581-1 [RFP] General Requirements**

- 581-1.1 [RFP] One anchoring system capable of anchoring the FRC-B on all types of bottom shall be provided. The anchoring system shall be sized in accordance with [USN DDS 581-1](#). An analysis shall be prepared to demonstrate compliance based on a sustained 70 knot wind speed, 3 knot current, a sandy bottom. ([CDRL 085-506](#)) Anchors shall be Danforth high-tensile style. One anchor is required to be rigged for deployment and recovery. An additional anchor is to be rigged as a spare and secured to the foredeck. Sufficient ground tackle shall be provided to anchor in a water depth five times the ship's draft. The anchor rode shall be at least 150m (492 ft) in total length.
- 581-1.2 [RFP] The anchor stowage shall be arranged for efficient handling and securing of the anchor, with consideration given for other functions such as mooring and towing operations. The arrangement shall be capable of retrieving and storing the anchor in all operating conditions.
- 581-1.3 [RFP] The anchoring equipment arrangement and performance shall be in accordance with the [ABS HSN C](#) Guide except only one anchor is required. The system shall be capable of hoisting the anchor and 30 fathoms of anchor rode submerged and hanging free at not less than 6 fathoms per minute, continuous. The system shall be capable of recovering the anchor and 45 fathoms of anchor rode submerged and hanging free at no specified speed, without exceeding the full load rating of the windlass or winch drive train. The arrangement of the anchoring system and the windlass shall handle both double braided nylon line and BBB chain without manual intervention. The stowed or deployed position of the anchor/rode shall not be on the windlass. A positive method for securing the anchor shall be provided. A method for securing the rode when shifting from the windlass to a bitt and vice versa shall be provided.
- 581-1.4 [RFP] Paying out of the anchor under control will be accomplished by manually wrapping the line being paid out around a deck bitt (or the stopped capstan) and using the friction created by the line around the bitt or capstan to control the descent. The mechanical brake shall be capable of holding the anchor and full length of anchor rode. Pad eyes, pelican hooks and Ulster, or equal, type chain stoppers shall be provided. They shall be designed to take chain anchoring forces, to lock the anchor in the pocket, and for towing the cutter via bow chocks. Bitts or deck cleats supporting anchor chain and synthetic line shall be designed to accept the full rated breaking strength of the line and chain without exceeding 70% of yield strength of materials.
- 581-1.5 [RFP] Pad eyes and pelican hooks shall be provided on the FRC-B, when equipped with anchor chain and synthetic line, to lock the anchor in the pocket, and for towing cutter via bow chocks. Anchoring forces shall be taken by the capstan. Padeyes, pelican hooks, and stoppers shall be fabricated out of CRES 316L.
- 581-1.6 [RFP] Winch units/capstan shall also be in accordance with [ASTM F1106](#). The drive shall be fitted with a spring set brake mechanism. Gear trains shall be enclosed, and shall meet [AGMA](#) (various) enclosed gearing standards, with design service factor of not less than 1.25. For the FRC-B equipped with alternative cable or wire, complete with chafe chain, the windlass or winch unit, if

fitted, shall automatically shift between synthetic line and wire or chain. Winch drum flanges shall have an exposed flange depth of not less than four wire or cable diameters when the entire cable or wire is installed.

- 581-1.7 [RFP] Local control, with remote disable, shall be provided at the powering unit for emergency and maintenance use only. Controls shall permit manual gravity release of the anchor. Emergency release shall not require power to the capstan. Weather deck controls shall be fitted with weather tight enclosures. Controls shall be covered when not in use. Pressure gages and hydraulic valves shall not be provided on the weather deck.
- 581-1.8 [RFP] Where alternative anchoring synthetic cables or wire are provided in lieu of chain, they shall have a wet breaking strength of not less than the required chain and shall have a length of not less than 1.5 times the required chain length. A chaff section of chain shall be provided immediately above the anchor, of sufficient length to at least reach the anchor windlass or winch (with the anchor in the pocket). An additional length of chain shall be provided to function as the shipboard end of the towing system.
- 581-1.9 [RFP] The windlass control shall be located in close proximity to the windlass.
- 581-1.10 [RFP] A 1/12 scale or greater functioning mockup shall be prepared (including anchor, anchor pocket, anchor chain, stoppers, wildcat and hawser pipe) to validate arrangements, equipment spacing, functionality, and correct anchor seating and falling before construction of equipment. (See COR Section 098.)
- 581-1.11 [RFP] Provisions shall be provided for draining, adding and checking oil levels, and for greasing the anchor windlass in accordance with manufacturer's requirements.
- 581-1.12 [RFP] Anchor rode stowage shall be provided in a bin below the main deck. It shall be possible to anchor by letting the anchor rode run free from the stowage position in the locker. The anchor rode shall be color coded and marked in accordance with [COMDTINST M10360 3C](#).
- 581-1.13 [RFP] The design of the anchoring arrangement shall ensure that the anchor and anchor rode will not foul or damage the hull, hull appendages, or equipment when deploying, riding at, or recovering anchor. The deck between the hawse pipe and the anchor windlass shall be protected from damage.
- 581-1.14 [RFP] The system shall be designed so that the crew does not have to manually stow the anchor during normal anchoring operations.

SECTION 582. [RFP] MOORING AND TOWING SYSTEMS**582-1 [RFP] General**

- 582-1.1 [RFP] Mooring and towing systems shall also comply with the [IMO HSC Code](#). Mooring analyses and mooring diagrams shall be prepared to document compliance with the minimum line size, design forces, line design safety factors, equipment size and functional requirements of [ABS Rules](#) or [DDS 582-1](#), and requirements herein under a variety of weather and pier conditions. Worst case design conditions shall prevail. ([CDRL 085-512](#))
- 582-1.2 [RFP] The Towing System shall be designed in accordance with the U.S. Navy Towing System Manual, SL740-AA-MAN-010 ([0910-LP-101-2029, Revision 3](#)) with a factor of safety of 4:1.

582-2 [RFP] Mooring Arrangements

- 582-2.1 [RFP] Mooring equipment shall be able to hold the ship at pierside in sustained beam winds of 70 knots and 3 knots of current.
- 582-2.2 [RFP] All bitts, chocks and machinery shall be fully accessible by personnel for mooring, breasting and tending lines. Arrangements shall provide clear paths for handling lines and clear working areas for personnel.
- 582-2.3 [RFP] Mooring machinery and arrangements shall provide the ability to breast the cutter to the pier under normal weather conditions without aide from thrusters or propulsors.
- 582-2.4 [RFP] Warping heads shall be provided in accordance with [ASTM F1106](#) and with finish suitable for use with wire rope and synthetic lines as applicable.
- 582-2.5 [RFP] Mooring winch enclosed gearing shall be designed in accordance with the applicable AGMA standard using a design service factor of not less than 1.25. Equipment shall be sized based on a factor of safety of not less than 5:1. Where capstan heads are driven as part of other deck machinery, clutch mechanisms and mechanical brakes shall be provided to lock the primary system and continue to power the capstan head.
- 582-2.6 [A009] A Mooring Operational Booklet shall be provided, detailing arrangements for breasting and mooring, in calm and heavy weather. The booklet is intended for use by bridge and deck personnel to facilitate execution of all types of mooring evolutions in all types of environmental conditions (e.g., wind, current, sea-state). The booklet shall include mooring diagrams and details on how to take all mooring lines to power, and be delivered as a chapter in the Cutter Information Book. ([CDRL 086-002](#))
- 582-2.7 [RFP] Bitts and closed chocks shall be arranged to provide for optimum line handling arrangement clear of interferences while allowing the FRC-B to effectively spring away from the pier. At least four mooring points each on the port and starboard side of the FRC-B shall be provided.
- 582-2.7.1 [RFP] Bitts shall have 316L CRES working surfaces, left unpainted. The tops of the bitts shall be painted in accordance with all other applicable sections of this COR. A grinder shall not be used on any bare metal surfaces.

- 582-2.8 [RFP] A separate cleat and closed chock shall be provided to take the painter of the Cutter Boat when alongside on both the port and starboard side. This closed chock shall be positioned so that the Cutter Boat is not alongside a side-shell exhaust (if provided).

582-3 [RFP] Towing Arrangements

- 582-3.1 [RFP] FRC-B towing another vessel.

582-3.1.1 [RFP] Arrangements for towing another craft per COR [Section 070](#) shall be provided. The arrangement shall consist of an aft towing bitt installed at a distance of at least 10% of LBP (LBP = the length between perpendiculars of the craft) forward of the rudder stock. Calculations for the towing equipment, tow bitt and supporting structure shall be prepared and submitted in accordance with [CDRL 085-512](#). The tow bitt and associated structure shall be designed with a factor of safety of 1.1 on the yield strength of the material, under an applied load equal to the breaking strength of the primary towing hawser (see COR Section 582-3). The surrounding deck and structure shall be designed so that the tow bitt fails before the deck. Any other suitable arrangement for towing can be provided for an FRC-B with waterjets.

582-3.1.2 [RFP] For towing another craft, the tow line hawser shall be attached to the towing bitt and led over a towing rail at the transom or some such device that will keep the hawser from being snagged on deck equipment. The towing arrangement shall be such that the towing line hawser can swing up to 60° to either port or starboard.

582-3.1.3 [RFP] The towing arrangement shall permit the FRC-B to tow effectively in the conditions specified in COR [Section 070](#) while also permitting the simultaneous launch and recovery of the Cutter Boat.

582-3.1.4 [RFP] The FRC-B shall be capable of towing a like-sized vessel alongside for maneuvering in restricted waters.

582-3.1.5 [RFP] The tow bitt shall be made out of 316L CRES or aluminum. Working surfaces of the tow bitt shall not be painted.

582-3.1.6 [A010] In addition to the requirements of COR Section 582-3.1.2, a towing pad and chafing chain assembly with quick release mechanism shall be provided for tow assembly in accordance with [NAVSEA Dwg 804-4759441 Rev A](#). Towing connections shall not exceed 50% of yield strength of materials when loaded to the advertised Rated Breaking Strength (RBS) of the towing hawser.

- 582-3.2 [RFP] FRC-B towed by another vessel.

582-3.2.1 [RFP] Arrangements shall be provided so the FRC-B can be towed by another vessel from directly over the bow. This arrangement shall be such that the towing line hawser, from the towing vessel, is kept clear of deck equipment that might be damaged or may damage the towing line hawser.

582-3.2.2 [RFP] The towing arrangement shall be in accordance with [NAVSEA Dwg. 804-4759441 Rev A](#). Cutters which anchor using synthetic line shall be provided with a suitable length of loose anchor chain for being towed. The chain shall be stronger than the hawser.

- 582-3.3 [A009] A Towing Operational Booklet shall be provided, detailing all arrangements for towing and being towed, in calm and heavy weather. The

booklet is intended for technical use by bridge and deck personnel in executing all possible towing evolutions in all types of at-sea conditions (e.g., wind, current, sea-state). It shall include towing diagrams and details on how to take hawsers to power, and be delivered as a chapter in the Cutter Information Book ([CDRL 086-002](#))

582-4 [RFP] Mooring Lines and Towing Hawsers

- 582-4.1 [RFP] Six (6) double braided nylon mooring lines shall be provided, sized in accordance with the calculations of COR Section 582-1.1. The minimum line size of the mooring lines shall be 75mm (3 in) circumference. The mooring lines shall be fitted with a 1m (39 in) eye on one end and whipped on the other end. Each line shall be the length of the FRC-B.
- 582-4.2 [RFP] Mooring hawsers shall be in accordance with [MIL-DTL-24050E](#) or [CID A-A-50435](#). Line strengths shall be based on minimum breaking strengths in order to permit replacement with National Stock Number issue line. The design of supporting equipment shall be based on the manufacturer's rated average breaking strengths of the lines.
- 582-4.3 [RFP] A primary towing hawser, sized in accordance with the calculations of COR Section 582-3.1, double braided polyester, 275m (902 ft) long shall be provided. A secondary towing hawser shall also be provided, 51mm (2 in) circumference double braided polyester, 180m (591 ft) long.
- 582-4.4 [RFP] A line handling capstan shall be installed on the forecastle, and shall be sized for handling the largest towing hawser, un-tensioned during handling. The capstan shall take the Rated Breaking Strength (RBS) of the hawser as a bitt load, without damage. The capstan shall develop not less than 10% of the RBS of the towing hawser. Drive trains shall lock and hold against twice the power developed.
- 582-4.5 [RFP] The towing hawsers shall be stored on separate ratchet-type reels. These reels shall be located in the interior of the FRC-B with quick and easy access to the towing bitt. The line shall be passed through a separate deck fitting of sufficient size to pass the eye and any other associated fittings on the working end of the towline. A deck hatch for personnel access shall not be used for this purpose.
- 582-4.6 [RFP] Towing hawsers shall be suitably marked in accordance with [COMDTINST M16114.5C](#), CG Boat Seamanship Manual.

SECTION 583. [RFP] BOATS, BOAT HANDLING AND STOWAGE**583-1 [RFP] Small Boat (Cutter Boat)**

583-1.1 [RFP] One commercial grade Cutter Boat, available on the GSA Federal Supply Schedule, with minor modifications shall be provided meeting the following requirements:

583-1.1.1 [RFP] Principal Characteristics:

Table 583-1

Length Overall, max	7.92m (26 ft)
Beam, max	2.74m (9 ft)
Weight (crew and full fuel), max	3,855.5 kg (8,500 lbs)
Speed, min	40 knots, in calm water
Fuel Endurance, min	200 nautical miles at 35 kts (on plane)
Propulsion	Diesel Engine, equipped with water-jet
Hull Material/Form	Marine Grade Aluminum, Deep VEE mono-hull
Seating	Shock Mitigating seating for crew of 5

583-1.1.1.1 [A009] The Cutter Boat shall be survivable at speeds up to 5 knots in a sea state 5.

583-1.1.1.2 [RFP] The Cutter Boat shall be capable of towing boats similar in size and weight.

583-1.1.1.3 [RFP] In addition to the operating crew, the Cutter Boat shall be capable of transporting at least eight people at 91kg (200 lbs) per person with a total of 68kg (150 lbs) of cargo.

583-1.1.1.4 [RFP] Shock mitigating seating for the operating crew of 5 shall be provided.

583-1.1.1.5 [RFP] The controls shall be ergonomically designed for the safe and effective operation of the Cutter Boat.

583-1.1.1.6 [RFP] The Cutter Boat shall be able to operate in the environmental conditions specified in COR 070-4.

583-1.1.2 [RFP] Hull Construction.

583-1.1.2.1 [RFP] The hull shall be welded marine-grade aluminum. All plate shall be grade 5086, 5083 or 5456 and all extrusions shall be grade 6061 T6.

583-1.1.2.2 [RFP] The stem and forward chine shall be reinforced with welded plate aluminum. If a stern launch and recovery system is provided, consideration shall be given on reinforcements for the impacts associated with stern launch and recovery.

583-1.1.2.3 [RFP] Deck. The deck shall be self-draining. Removable deck sections shall be provided for access to the fuel tank (including inspection plates for fuel lines) and the water jet.

- 583-1.1.2.3.1 [RFP] Deck plating shall have anti-slip material applied (3-M Safety Walk: Coarse or equal). Adhesive non-slip/non-skid shall have edge dressing applied.
- 583-1.1.2.3.2 [RFP] Foam floatation, if installed shall be removable in all hull voids.
- 583-1.1.2.3.3 [RFP] Six flush-deck tie-down fittings shall be provided to secure to the deck mission critical equipment and able/incapacitated body. Equipment includes a dewatering pump (P6 or P100, see COR Section [664-2](#)) or a stokes litter (see COR Section [652-2](#)).
- 583-1.1.2.4 [RFP] Cathodic protection. The Cutter Boat shall utilize the standards and recommended practices of ABYC for the design, installation and use of a cathode protection system using sacrificial anodes.
- 583-1.1.2.5 [RFP] Bow and Stern Eyes.
- 583-1.1.2.5.1 [RFP] The bow eye shall be located on the stem below the fendering and above the waterline in the normal operating condition in a position suitable for securing the boat to the trailer.
- 583-1.1.2.5.2 [RFP] The stern eyes shall be located port and starboard on the transom with the eyes facing aft in a location suitable for use in securing the boat to the trailer. The stern eyes shall be above the waterline in the normal operating condition.
- 583-1.1.2.5.3 [RFP] Bow and stern eyes shall be of sufficient size that it can pass a 16mm (5/8 in) diameter (51mm (2 in) circumference) double braided nylon line.
- 583-1.1.3 [RFP] Collar.
- 583-1.1.3.1 [RFP] The Cutter Boat shall be provided with a prominent collar fendering system capable of absorbing impacts and protecting the Cutter Boat from damage during launch and recovery from the FRC-B and when coming alongside other vessels for boarding, cargo transfer and other operations. The collar shall extend along the sides and bow of the boat, but need not cover the stern as long as the boat can be safely launched and recovered without the decks becoming awash.
- 583-1.1.3.2 [RFP] The collar fendering system shall be attached to the hull and shall protect the hull from collisions without damage at speeds up to 5 knots. The fendering system shall be either foam/air hybrid, or foam.
- 583-1.1.3.2.1 [RFP] The fendering system shall be attached using mechanical fasteners. The use of glue on type fendering is not acceptable.
- 583-1.1.3.2.2 [RFP] The fendering shall be attached in such a manner that in the event of damage, the fendering shall be removable and shall be replaceable by only two (2) persons with common hand tools.
- 583-1.1.3.3 [RFP] Rub Strakes: The collar shall have heavy duty rub strakes on the outboard side to protect them from abrasions.
- 583-1.1.3.4 [RFP] The fendering shall be constructed of durable materials which are highly resistant to puncture, tearing, sunlight degradation, and suitable for stepping on during repeated embarking and disembarking by boat crews. Two part polyurethane coating systems are prohibited.
- 583-1.1.3.5 [RFP] The fendering color shall be international orange (12197).

- 583-1.1.3.6 [RFP] The fendering shall be marked port and starboard with the words "U.S. COAST GUARD" in block letters that are 152mm (6 in) high. The Coast Guard number provided by the Government shall be affixed in black 152mm (6 in) high block letters to the stern of the transom above the waterline. [COMDINST M10360.3C](#) shall be used for guidance.
- 583-1.1.3.7 [RFP] Handrails or hand lines shall also be provided for transiting around the vessel.
- 583-1.1.4 [RFP] Stability.
- 583-1.1.4.1 [RFP] The Cutter Boat shall be stable under all operating and loading conditions.
- 583-1.1.4.2 [RFP] The Cutter Boat shall have sufficient buoyancy to meet the requirements of "level flotation" as defined by [ABYC H-8](#). The fendering may contribute to meeting this requirement.
- 583-1.1.4.3 [RFP] The Cutter Boat shall have sufficient flotation to meet the requirements of "Basic Flotation" as defined by ABYC ["Standards & Technical Information Reports for Small Craft"](#) without the fendering system in place.
- 583-1.1.5 [RFP] Propulsion System.
- 583-1.1.5.1 [RFP] The Cutter Boat propulsion system shall consist of a compression ignition diesel engine, reversing gear, water jet w/ dump valve, throttle, steering system and engine indicators (gauges).
- 583-1.1.5.2 [RFP] The power, torque and RPM of the engine and propulsion unit shall not exceed those specified by the OEM for the intended service. The propulsion system shall be fitted with a block heater to maintain minimum engine block starting temperatures with an outside temperature of -18°C (0°F).
- 583-1.1.5.3 [RFP] Certification shall be provided that the engine complies with exhaust emission regulations of [MARPOL \(73/78\) Annex VI](#) and [40 CFR 94](#) (EPA Tier II), Control of Air Pollution from Marine Compression Ignition Engines. ([CDRL 583-001](#))
- 583-1.1.5.4 [RFP] The Cutter Boat shall have a wet exhaust system. A raw water strainer shall be installed for the engine cooling system. The raw water pump shall allow the diesel engine to run "dry" for up to five minutes prior to launching of the Cutter Boat. The propulsion system must operate on Diesel Fuel No. 2, with an objective of also being able to operate on JP-5 type fuel, without negative impact to the engine warranty.
- 583-1.1.5.5 [RFP] The engine compartment cover shall be fitted with appropriately sized and located lifting assist mechanism to allow the cover to be lifted by one crewmember and for ease of operation and crew safety. The engine compartment cover shall be equipped with a positive locking and hold-open device. There shall be sufficient space around the installed engine to permit crews to carry out daily engine checks, routine maintenance and corrective measures. The engine shall also come equipped with a Fast Lube Oil Change-out System (FLOCS).
- 583-1.1.6 [RFP] Propulsion Control and Monitoring System.

- 583-1.1.6.1 [RFP] The propulsion system installation shall include console-mounted throttle, bucket, and gear controls for the propulsion engines. Controls shall be separate for the throttle, bucket, and gear, with the throttle controls grouped together, the bucket controls grouped together, and gear controls grouped together. Controls shall be rated for commercial use.
- 583-1.1.6.2 [RFP] The water jet bucket shall be hydraulically controlled.
- 583-1.1.6.3 [RFP] Instruments and Alarms.
- 583-1.1.6.3.1 [RFP] The following engine gauges and alarms of the nominal dial sizes indicated for each engine(s) shall provide and install within sight of Coxswain (OEM engine panels meeting these requirements may be provided in lieu of separate gauges):
- 583-1.1.6.3.1.1 [RFP] Engine RPM Gauge
- 583-1.1.6.3.1.2 [RFP] Engine jacket water temperature
- 583-1.1.6.3.1.3 [RFP] Engine Lube Oil Pressure Alarm Light
- 583-1.1.6.3.1.4 [RFP] Low lube oil pressure
- 583-1.1.6.3.1.5 [RFP] Low voltage/Alternator Output Alarm Light
- 583-1.1.6.3.1.6 [RFP] Voltmeter, 51mm (2 in) min. diameter
- 583-1.1.6.3.1.7 [RFP] Fuel Flow meter & totalizer, 76mm (3 in) nominal diameter
- 583-1.1.6.3.1.8 [RFP] Fuel Gauge, 51mm (2 in) nominal diameter
- 583-1.1.6.3.1.9 [RFP] Engine Hour Meters
- 583-1.1.6.3.1.10 [RFP] High jacket water temperature
- 583-1.1.6.3.2 [RFP] All gauges shall be backlit with adjustable dimming (0-100%), suitable for night time operations and Night Vision Goggle compatible.
- 583-1.1.6.3.3 [RFP] Audible alarms shall be provided to indicate high engine temperature, low lubrication oil pressure, and alternator failure. Alarm tones shall be distinct to indicate type of casualty and engine affected.
- 583-1.1.6.3.4 [RFP] A multi-function or total engine management system is an acceptable alternative to individual engine gauges.
- 583-1.1.7 [RFP] Electrical System.
- 583-1.1.7.1 [RFP] The Cutter Boat shall be provided with an ungrounded DC (12V or 24V) electrical system to provide for all on board loads while underway.
- 583-1.1.7.1.1 [RFP] The engine block heaters shall be 120VAC for use while connected to the FRC-B's electrical system through the shore tie cable.
- 583-1.1.7.2 [RFP] The Cutter Boat power distribution system shall utilize a circuit breaker system (vice fuses). All components in the electrical distribution system shall be ungrounded and shall not use the boat's hull to complete any circuit. There shall be a minimum of one spare breaker per panel. Circuit breakers shall not be used as switches.

- 583-1.1.7.3 [RFP] The electrical system shall be designed and installed in accordance with the following ABYC Standards: [E-4](#) Lightning Protection, [E-10](#) Storage Batteries and [E-11](#) AC/DC Electrical Systems on boats except that the system shall be ungrounded to be compatible with the Cutter's electrical system when the boat is connected through the shore tie cable.
- 583-1.1.7.4 [RFP] The system shall be designed so that at engine idle speed the alternators shall provide sufficient output to power all electronics and lighting required for safe operation/navigation of the vessel.
- 583-1.1.7.5 [RFP] The electrical equipment shall be capable of operating simultaneously with electronics equipment without causing interference to any electronic equipment or the compass. The system shall provide sufficient power to operate all installed electrical systems using a 12V DC System.
- 583-1.1.7.6 [RFP] Protective Devices for Electric Circuits.
- 583-1.1.7.6.1 [RFP] All electrical and electronic equipment enclosures shall be watertight or shall be installed in a watertight console or compartment. All enclosure penetrations or stuffing tubes shall be on the bottom side of the enclosures to prevent drainage into the enclosure.
- 583-1.1.7.6.2 [RFP] All electrical and electronic cables which penetrate any watertight envelope or bulkhead on the boat shall be via a watertight stuffing tube.
- 583-1.1.7.6.3 [RFP] Circuit breakers for the AC and DC distribution system shall meet the construction, installation and sizing requirements of the [ABYC Standard](#). Fuses shall not be used except where provided by the equipment manufacturer as in-line power protection. These in-line power fuses shall be co-located in one fuse block and will serve as secondary protection, with the circuit breaker providing primary protection. Each circuit with an in-line fuse will be so designated at the circuit breaker.
- 583-1.1.7.7 [RFP] Wiring And Electric Circuits
- 583-1.1.7.7.1 [RFP] Any cable used on the Cutter Boat that is exposed to the elements and/or is not inside watertight enclosures shall be watertight. Low smoke watertight cabling meeting the requirements of [MIL-DTL-24640B](#) is acceptable.
- 583-1.1.7.7.2 [RFP] Conductors shall be continuous.
- 583-1.1.7.7.3 [RFP] Battery cable connections shall be of the hex nut, lock washer type. Wing nuts shall not be used.
- 583-1.1.7.8 [RFP] Electrical Designation and Marking.
- 583-1.1.7.8.1 [RFP] Each conductor shall be marked, on both ends, to identify its function in the electrical system. Tape shall not be used to mark wiring.
- 583-1.1.7.8.2 [RFP] All switches shall be marked with a placard that describes the function of the switch. All receptacles shall be labeled with the maximum load rating and the voltage. All circuits shall be identified on the circuit breaker panel with the name of the circuit. The items

covered under each circuit and the circuit load rating shall be displayed on or near the circuit breaker panel and may be located where a maintenance technician would access. The placard need not be visible to the operators and crew.

- 583-1.1.7.9 [RFP] Batteries And Battery Charging
- 583-1.1.7.9.1 [RFP] Batteries. The Cutter Boat shall be provided with two Absorbed Glass Mat (AGM), starved electrolyte, maintenance-free type marine grade “starting and deep cycle” batteries. Batteries shall be sized to the engine manufacturer’s requirements, shall be installed in drip proof ventilated, heavy duty battery boxes designed to withstand extreme impact associated with operating conditions. An explosion proof battery selector switch shall be provided for each battery and shall be bulkhead mounted.
 - 583-1.1.7.9.2 [RFP] The batteries shall be installed and wired such that either starting battery individually may be paralleled to start any engine or power the electronics.
 - 583-1.1.7.9.3 [RFP] Access for all connections shall be provided.
 - 583-1.1.7.9.4 [RFP] Battery Charger. A portable marine battery charger shall be provided for installation on the FRC-B for use while the Cutter Boat is in the stowed position. The battery charger shall not be installed on the Cutter Boat.
- 583-1.1.7.10 [RFP] Power Cables and Outlets.
- 583-1.1.7.10.1 [RFP] An appropriately sized shore tie cables shall be provided. The cable shall be a minimum of 9.1m (30 ft) in length, with scuff-proof covering, and shall not be intended to be normally carried on-board the Cutter Boat.
 - 583-1.1.7.10.2 [RFP] The shore power connections shall be protected from stray ground currents by use of a permanently installed galvanic isolator or isolation transformer installed in the shore tie cable.
 - 583-1.1.7.10.3 [RFP] The primary console shall be provided with two (2) marine grade “cigarette lighter” type accessory plugs with watertight covers for use of 12VDC and 24VDC auxiliary equipment.
- 583-1.1.8 [RFP] Navigation System.
- 583-1.1.8.1 [A009] The Cutter Boat shall have a Coast Guard Standard Scalable Integrated Navigation System (SINS) mounted in a shock mitigating navigation pod. Shock mitigating mounting shall be designed to prevent the equipment manufacturers’ shock and vibration thresholds from being exceeded while operating in the environmental conditions specified in COR [Section 070-4](#). The SINS requires:
 - 583-1.1.8.1.1 [RFP] 1734C/NT Radar/Video Plotter (ARP 11 option installed) w/ 008-523-070 (video input) options, (Installed in a location viewable by the coxswain and protected from the maritime environmental elements).
 - 583-1.1.8.1.2 [RFP] PG500 Heading Sensor.

- 583-1.1.8.1.3 [RFP] GP-37 GPS/DGPS with GPA09 GPS antenna (Installed in a location viewable by the coxswain and protected from the maritime environmental elements).
- 583-1.1.8.1.4 [RFP] RD-30 Multi-Display Unit (Installed in a location viewable by the coxswain and protected from the maritime environmental elements).
- 583-1.1.8.1.5 [RFP] 235 DT-PSE Transducer.
- 583-1.1.9 [RFP] Communications System.
 - 583-1.1.9.1 [RFP] Tactical - VHF Radio (Primary VHF) – A Motorola XTL-5000 shall be provided and installed with remote head, that meets the requirements of COR [Section 440-7](#).
 - 583-1.1.9.2 [A009] Digital Selective Calling VHF-FM Radio (Secondary VHF Radio) – A COTS DSC marine-band Class "D" DSC VHF-FM radio with power output selectable between 25W high power and 1W low power shall provided and installed. The DSC VHF-FM radio shall be flush mounted in a shock mitigating communications pod. Shock mitigating mounting shall be designed to prevent the equipment manufacturers' shock and vibration thresholds from being exceeded while operating in the environmental conditions specified in COR [Section 070-4](#). The DSC VHF-FM radio shall meet the following requirements
 - 583-1.1.9.2.1 [RFP] Separate Channel 70 Receiver (able to simultaneously and constantly monitor DSC Channel 70 and Channel 16 (or scanning channels 16 and 13)).
 - 583-1.1.9.2.2 [RFP] External speaker (Waterproof JIS/IPX Grade 7).
 - 583-1.1.9.2.3 [RFP] Power-Up Default Mode: Disabled automatic acknowledgements of any call.
 - 583-1.1.9.2.4 [RFP] Environmental Protection: Minimum JIS/IPX rating of 7 (Protected against water immersion - Immersion for 30 minutes at a depth of 1m (3.28 ft)).
 - 583-1.1.9.2.5 [RFP] Output at least one of the following NMEA-0183 messages whenever a DSC Distress Message is received: DSE (Digital Selective Calling - Extended), DSC (Digital Selective Calling), or TLL (Target Lat/Long). These message formats are provided in priority order, with DSE the preferred format.
 - 583-1.1.9.2.6 [RFP] Electrical isolation of negative supply voltage from external mating surfaces including mounting hardware and RF transmission components (coaxial cable shielding and connectors).
 - 583-1.1.9.2.7 [RFP] Display: minimum of a 4-Line Display, Lat/Long of Distress Call, Nature of Distress Call, MMSI of Distress Call, Date/Time of Distress Call
 - 583-1.1.9.2.8 [RFP] Receive a Distress Call
 - 583-1.1.9.2.9 [RFP] Receive a Distress Call Acknowledgement
 - 583-1.1.9.2.10 [RFP] Receive a Distress Relay
 - 583-1.1.9.2.11 [RFP] Receive a Distress Relay Acknowledgement

- 583-1.1.9.2.12 [RFP] Ability to manually transmit a Distress Call from the Distress Key
- 583-1.1.9.2.13 [RFP] Ability to manually transmit a Distress Call with Nature of Distress
- 583-1.1.9.2.14 [RFP] Ability to Cancel a False Distress Alert
- 583-1.1.9.2.15 [RFP] Output DSC distress call information to be displayed on the Cutter Boat's Scalable Integrated Navigation System (SINS).
- 583-1.1.9.3 [RFP] UHF Radio
 - 583-1.1.9.3.1 [A009] A Motorola XTL-5000 UHF radio meeting the requirements of COR [Section 440-10](#) shall be provided and installed with a remote control head and an antenna.
- 583-1.1.9.4 [RFP] Loudhailer / Siren.
 - 583-1.1.9.4.1 [RFP] A 30W minimum commercial loudhailer/siren shall be provided and installed, independent of other communication systems, that meets the requirements of COMDTINST M16672.2 for sound signaling. The loudhailer shall be provided with a water resistant speaker, mounted in accordance with the manufacturer's recommendations. The loudhailer shall have listen-back capability with a minimum amplification of 3dB. The loudhailer shall have the ability to activate the siren/yelp independent of the handheld microphone.
- 583-1.1.9.5 [RFP] Automatic Identification System / Blue Forces Tracking (AIS/BFT).
 - 583-1.1.9.5.1 [RFP] The CG specific L3 Protec-M version 2 AIS system (COR [Section 455-2](#)) shall be provided and installed in the Cutter Boat. The system shall be integrated with the SINS chart plotter to display AIS tracks. The system shall include a separate GPS antenna and interface with existing DGPS antenna to meet IMO standards.
 - 583-1.1.9.5.2 [RFP] AIS/BFT Transponder. The AIS/BFT transponder shall be installed to allow for easy access to the AIS control panel for loading of codes.
- 583-1.1.9.6 [RFP] HF-ALE Transceiver (Over the Horizon Tactical Comms).
 - 583-1.1.9.6.1 [RFP] The Cutter Boat shall have one Joint Interoperability Test Command (JITC) interoperable certified High Frequency - Automatic Link Establishment (HF-ALE) voice and data enabled with digital coupler, such as the Micom 3T transceiver. The HF-ALE transceiver shall operate over 2 to 29.9999 MHz at 25, 62, 100, and 125 watts.
 - 583-1.1.9.6.2 [RFP] The HF-ALE transceiver shall be capable of interfacing with GFE Cryptographic equipment (KY-99A and HYP-57).
 - 583-1.1.9.6.2.1 [RFP] Space, weight, and power shall be reserved for this Cryptographic equipment. Size, Weight and Power requirements for the KY-99A and HYP-57 devices: 76.2mm x 139.7mm x 170.2mm (3 in x 5.5 in x 6.7 in), 2.0kg (4.5 lbs) and 2.5w at 17-40VDC.

- 583-1.1.9.6.2.2 [RFP] All cables and connectors associated with interfacing the KY-99A and HYP-57 to the HF-ALE transceiver system shall be Contractor provided.
- 583-1.1.9.6.2.3 [RFP] The KY99-A and HYP-7 shall be mounted in a manner which will allow the units to be secured with a locking device.
- 583-1.1.9.6.3 [RFP] The HF-ALE antenna shall be mounted at least three feet from nearest crewman and shall be capable of being folded or otherwise lowered without disassembly. When in the stowed position, the antenna shall not be a tripping hazard or be vulnerable to damage by being stepped on.
- 583-1.1.9.6.4 [RFP] The HF-ALE transceiver shall have an external speaker and microphone.
- 583-1.1.9.7 [RFP] Integrated Crew Communications System.
- 583-1.1.9.7.1 [RFP] A Crew Communications System shall be installed. This system shall have a marine grade, water resistant, headset type crew communications system.
- 583-1.1.9.7.2 [RFP] The system shall be able to independently monitor and transmit all onboard radio systems from each crew station. It shall provide hands free voice communications between crew stations.
- 583-1.1.9.7.3 [RFP] The system shall have outlets from each crew station and one additional outlet forward on the Cutter Boat.
- 583-1.1.9.7.4 [A010] The headsets used for the system shall have the following features:
- 583-1.1.9.7.4.1 [A010] The headsets shall withstand immersion for a minimum of 30 seconds and shall be held at a depth of 6m (20 ft) for 10 seconds. The headsets shall be capable of withstanding a minimum of three such immersions without degradation.
- 583-1.1.9.7.4.2 [A010] The headset shall provide a minimum noise reduction rating (NRR) of 20 dBA and the audio at the operator's ear shall not exceed 84 dBA.
- 583-1.1.9.7.4.3 [A010] The headset shall provide the capability of hearing the outside environment via electronic amplification of outside sound while connected to the system.
- 583-1.1.9.7.4.4 [A010] Non-boom microphones are acceptable. The cord length and type depends on the arrangement of the proposed craft and should of adequate length to provide an interface between the platform and the crew performing the mission.
- 583-1.1.9.8 [A013] Full authority to operate based on an instrumented Tempest inspection (COR [Section 400-3.6](#)) is required. This inspection will encompass all equipment that is integrated with the KY-99. The installation shall be in accordance with Navy [IA Pub 5239-31](#), Information Assurance Shipboard RED/BLACK Publication and [MIL-STD-1310G](#) (Shipboard Bonding, Grounding, and Other Techniques for Electromagnetic Compatibility and Safety).
- 583-1.1.10 [RFP] Lighting Systems. The following shall be provided:

- 583-1.1.10.1 [RFP] LED navigational lights which comply with [COMDTINST M16672.2D](#).
- 583-1.1.10.2 [RFP] LED flashing blue law enforcement light.
- 583-1.1.10.3 [RFP] On board courtesy lighting consisting of three pairs of deck lights, two on the deck one in the engine space.
- 583-1.1.10.4 [RFP] A portable spotlight with a minimum of one million candela shall also be provided.
- 583-1.1.11 [RFP] Fuel System.
- 583-1.1.11.1 [RFP] The fuel system, including fuel tanks, filters, water separators, hoses and fittings, shall comply with the ABYC Project [H-32](#), Ventilation of Boats Using Diesel Fuel; and [H-33](#), Diesel Fuel Systems. The fuel tank(s) shall be sized to meet the range and endurance requirements of COR Section 583-1.1.1 while maintaining a 15% reserve of usable fuel.
- 583-1.1.11.2 [RFP] Each fuel tank shall have a fuel level indicating gauge with a visual display at the operator's control console.
- 583-1.1.11.3 [RFP] The fuel tank(s) shall be designed to be easily accessible, removable with hand tools and must provide complete access to tank(s) and adjacent spaces for periodic inspection.
- 583-1.1.11.4 [RFP] The fuel tank(s) shall be constructed of at least ¼" aluminum with no bottom seam. The fuel tank(s) shall be baffled in accordance with ABYC Project [H-24](#). Tanks shall be manufactured to withstand extreme service.
- 583-1.1.11.5 [RFP] If multiple fuel tanks are utilized, selector valves must be provided wherein all fuel tanks can provide fuel for any engine. Tank capacity will be marked at the location of each selector switch.
- 583-1.1.11.6 [RFP] Fuel tank(s) shall be provided with stainless steel or aluminum fuel fillers.
- 583-1.1.11.7 [RFP] All fuel tanks must be securely bedded to the hull to assure a minimal 5 year warranty standard.
- 583-1.1.12 [RFP] Noise and Vibration
- 583-1.1.12.1 [RFP] The onboard A-weighted noise levels shall not expose the crew to more than 85 dBA when operating at 35 knots and sitting in the seats. Noise exposure may be mitigated by the use of the Crew Communications Headsets.
- 583-1.1.13 [RFP] Safety Equipment.
- 583-1.1.13.1 [RFP] The following safety equipment shall be installed aboard the Cutter Boat:
- 583-1.1.13.1.1 [RFP] Electric bilge pump rated no less than 5,678 lph (1,500 GPH).
- 583-1.1.13.1.2 [RFP] Manual bilge pump.
- 583-1.1.13.1.3 [RFP] Fixed fire extinguisher in engine space manually controlled from the coxswain position and with indicator alarm.

583-1.1.13.1.4 [RFP] Emergency Position Indicating Radio Beacon (EPIRB), a 406 MHz CAT II EPIRB with a built-in GPS location transmitter mounted on the side or front of the coxswain helm pod.

583-1.1.14 [RFP] Outfit items.

583-1.1.14.1 [RFP] The Cutter Boat shall be provided with the following outfit items:

Table 583-2

Qty.	Item
1	Pelican Case part number 1720 or equal (to store two long guns)
2	B1 Fire Extinguishers
1	Expandable Boat Hook
1	Foot pump (for inflatable fendering)
1	Fendering Patch Kit, with pressure gauge (for inflatable fendering)
1	18" Life Ring
1	Floating Marker Light
1	Engine Ignition Kill Switch lanyard with a spare
1	Bright handheld Spotlight with plug to mate with console accessory plug
2	Two Paddles
1	Set of Restraining Straps for the portable pump
1	Ensign, National (NSN 8345-00-245-2040)
1	Ensign, USCG
1	Anchor kit

583-1.1.14.2 [RFP] Each outfit item shall be provided with safe and convenient storage on the Cutter Boat.

583-1.1.14.3 [RFP] The Cutter Boat shall be provided with additional weathertight storage of at least 0.057m³ (2 ft³).

583-1.1.14.3.1 [RFP] Two water tight storage bags with a capacity of no less than 0.085m³ (3 ft³) each capable of being attached to a location that allows easy access while the Cutter Boat is underway yet does not restrict movement of personnel.

583-1.1.14.3.2 [RFP] An anchor handling system shall be provided. The anchor, chain, line and associated shackles shall be sized and installed in compliance with [ABYC standards](#).

583-1.1.14.3.3 [RFP] The bow post shall be capable of acting as a gun mount foundation for a 7.62-mm weapon when required ([MK 16 Mod 8 pintle type weapon stand](#)). The mount shall be able to withstand the peak recoil load of an M240B with a safety factor of two. The base of the mount shall have sufficient access below the foundation plate to access the bolts.

583-1.1.15 [RFP] Trailer

- 583-1.1.15.1 [RFP] A heavy duty trailer shall be provided which complies with all Department of Transportation and U.S. Federal Motor Vehicle Safety Standards.
- 583-1.1.15.2 [RFP] The trailer shall be galvanized steel or aluminum construction.
- 583-1.1.15.2.1 [RFP] All fasteners shall be stainless steel ([ASTM A276](#), Type 316) unless other steel is required to meet Department of Transportation and U.S. Federal Motor Vehicle Safety Standards.
- 583-1.1.15.2.2 [RFP] Bunks and keel rollers to support the Cutter Boat shall be provided to prevent any damage and movement while being transported and to allow easy launch and recovery on ramps with various angles.
- 583-1.1.15.3 [RFP] The trailer shall be equipped with a bow eye and two transom eyes for securing the Cutter Boat.
- 583-1.2 [RFP] The Cutter Boat shall be provided for initial testing and training no later than one month prior to Builder's Trials.

583-2 [RFP] Cutter Boat Launch and Recovery System – General

- 583-2.1 [RFP] A Cutter Boat Launch and Recovery system, compatible with the small boat identified in COR Section 583-1, shall be provided, capable of rapidly and safely launching and recovering the Cutter Boat, in the following conditions:
- 583-2.1.1 [RFP] Launch and Recovery.
- 583-2.1.1.1 [RFP] The Cutter Boat launch and recovery system shall be designed so that no more than three crew members are required to rapidly and safely launch and recover the Cutter Boat, fully loaded, in the environmental conditions required in COR Section [070-2](#), with the FRC-B taking best heading and speed.
- 583-2.1.1.1.1 [RFP] Accelerations at the boat launch and recovery system shall meet the requirements of COR Section [079](#).
- 583-2.1.1.2 [RFP] Launch and Recover while Towing. The system shall be designed to safely launch and recover the Cutter Boat while the FRC-B is towing another vessel or is being towed. See COR [Section 070](#).
- 583-2.1.1.3 [RFP] Number of Cutter Boat Launch and Recovery System Operating Personnel. The Cutter Boat launch and recovery system shall be designed so that launch and recovery can be performed safely with no more than three personnel in addition to the Cutter Boat crew.
- 583-2.1.2 [RFP] Emergency Backup. The Cutter Boat launch and recovery system shall be designed with an emergency backup system enabling the crew of the FRC-B to perform at least one launch and recovery cycle of the Cutter Boat after the failure of the primary launch and recovery system.
- 583-2.1.3 [RFP] The recovery system shall allow the FRC-B to safely recover the Cutter Boat in the event that the Cutter Boat has lost propulsion.
- 583-2.1.4 [RFP] Location and Protection.
- 583-2.1.4.1 [RFP] Cutter Boat launch and recovery operations should not occur immediately adjacent to propellers, overboard discharges, or through-hull exhausts of the FRC-B.

- 583-2.2 [RFP] The Cutter Boat launch and recovery system shall be designed so that the Cutter Boat is always under positive control from the FRC-B and/or the Cutter Boat crew during launch and recovery operations in the limiting sea conditions.
- 583-2.2.1 [A009] Positive control means that the Cutter Boat crew and FRC-B crew shall have a positive means of controlling the speed, direction and attitude of the Cutter Boat at all time during launch and recovery operations required to ensure safety of the crew and prevent damage to equipment (FRC-B and cutter boat). The cutter boat launch and recovery evolution shall be a safe and repeatable evolution that provides the crew with control over the cutter boat at all times.
- 583-2.2.1.1 [A009] For side launch and recovery this means that either the coxswain has throttle/steering control over the cutter boat or it is attached and under the control of the capture/lifting mechanism.
- 583-2.2.1.2 [A009] For stern launch this means that either the coxswain has throttle/steering control over the cutter boat or it is on the ramp in the stern notch attached to the FRC-B. A brief period is allowed, for a maximum of 3 seconds during launching when the cutter boat transitions from the ramp/notch to coxswain control and during recovery when the cutter boat transitions from coxswain control to being captured in the notch.
- 583-2.3 [RFP] If a davit system is provided, a constant tension mode and motion compensation / anti-pendulation feature shall be included. Davits shall be designed to meet the requirements of COR Section 583-4.
- 583-2.4 [RFP] Provisions for stowage and securing the Cutter Boat in the conditions described in COR [Section 070](#) shall be provided.
- 583-2.5 [RFP] Adequate night vision compliant lighting shall be provided to allow the crew operating the Cutter Boat to safely launch, recover, and complete maintenance on the Cutter Boat during night operations.
- 583-2.6 [RFP] The system shall be designed with the ability to safely launch and recover the Cutter Boat with full fuel and the Coast Guard payload (personnel, cargo, outfit) stated in COR Section 583-1.1.1.
- 583-2.7 [RFP] The system design shall be such that preparations for launching the Cutter Boat are limited to removal of the securing system and/or Cutter Boat covering and loading of the Cutter Boat. The Cutter Boat securing system shall not require a crew member to go outboard of the FRC-B liferails or lifelines, or entering the notch (if provided) to release the Cutter Boat.

583-3 [RFP] Stern Launch System

- 583-3.1 [A010] If the FRC-B is equipped with a Stern Launch system, a winch shall be provided that is designed with the capability to safely launch and recover the fully outfitted Cutter Boat required in COR Section 583-1.1.1 at a minimum speed of 9^m/_{min} (30 fpm). At a minimum, the winch cable shall be long enough to extend 5m (16.5 ft) beyond the aft edge of the notch with a forged safety latch hook on the working end. The cable may be CRES or [Amsteel Blue](#) or equal, and must be compatible with the winch. The winch shall have a roller fairlead system with a mechanical brake. The winch shall be capable of free-spooling when needed. The winch shall have the capability to operate with a remote hand held switch. The winch controls shall be hardwired and installed next to the stern door

controls. A nylon winch cover shall be provided that complies with COR [Section 613](#), to protect the winch and motor when not in use.

- 583-3.1.1 [RFP] If an electric winch motor is provided, it shall be installed in accordance with [IEEE-STD-45](#), [46 CFR Subchapter K](#), and the manufacturer's installation procedure.
- 583-3.1.2 [RFP] If a hydraulic winch is provided, it shall be installed in accordance with COR SECTION 556.
- 583-3.2 [RFP] Cutter Boat Notch Door(s).
 - 583-3.2.1 [RFP] Hydraulically actuated Cutter Boat notch door(s) shall be provided.
 - 583-3.2.2 [RFP] All hydraulic components shall be installed in the interior of the FRC-B to the maximum extent possible.
 - 583-3.2.3 [RFP] A mechanical system shall be provided for the safe opening and closing of the transom door. The hydraulic rams shall be in retracted position when the door is closed.
 - 583-3.2.4 [RFP] The mechanical door system shall not be powered by an HPU which supports steering functions.

583-4 [RFP] Davit System

- 583-4.1 [RFP] If provided, the structural design of the davit system shall assume a minimum factor of safety equal to 6 based on the maximum applied load and the minimum ultimate strength of the materials. The structural design shall consider the FRC-B heeled 15° and trimmed 10°. The calculations shall be provided in accordance with [CDRL 085-005](#).
- 583-4.2 [RFP] The davit system shall be provided with a console with HPU start/stop controls, davit functional controls, constant tension controls, emergency stop control, and indicator lights. The control system shall not interfere with cutter communication equipment or be subjected to cutter communication equipment interference.
 - 583-4.2.1 [RFP] A fixed console shall be installed on the aft side of the davit. The console shall be fabricated of CRES, and shall have a CRES cover which is lifted for operation. All controls shall be watertight. The console shall be installed in clear visibility of the operator of the cutter boat in the water in the launch/retrieve position. Alternatively, if the davit is installed on the centerline of the cutter, the console (with all controls) shall be mounted on the davit and a wireless remote control system shall be provided for use by an operator standing with visibility of the cutter boat in the water in the launch/retrieve position.
 - 583-4.2.2 [RFP] If a wireless remote control system is provided, it shall be chest-pak type with harness and neck strap. The remote control system shall provide davit functional controls, constant tension controls, emergency stop control and indicator lights; remote control of the HPU is not required. Provision shall be made for multiple control channels to permit multiple FRC-Bs to operate in close proximity to one another without cross-FRC-B interference.
- 583-4.3 [RFP] The davit system shall be powered by an on-board self-contained electro-hydraulic power unit (HPU) of CRES 316 construction, complete with electric motor, pump, hydraulic tank, pressure & return filters and oil level/temperature

gauges. The hydraulic system shall meet the requirements of COR Section SECTION 556.

- 583-4.3.1 [RFP] The HPU shall have a time delayed load sensing system to reduce operating pressure when not in use. The HPU shall be capable of operation for multi-hour periods without any load and without overheating.
- 583-4.3.2 [RFP] The HPU shall be fitted with a cooling system operating on a separate reservoir pump loop meeting the requirements of COR Section 556-5.6.
- 583-4.4 [RFP] The davit system shall incorporate a motion compensating “constant tension” winch, electronically controlled, to allow high speed response (91 – 152 $\frac{m}{min}$ (300-500 fpm)) at an adjustable, low tension (133 – 1,779N (30-400 lbf)).
- 583-4.5 [RFP] Davit design shall provide for at least a 10% size and weight margin capacity against the selected boat to be delivered.
- 583-4.6 [RFP] Davits for launch and recovery of cutter boats, having a crew on board, shall meet SOLAS III Part C Regulation 48 Rescue Boat requirements, with the following exceptions:
 - 583-4.6.1 [RFP] Cutter boat nominal “lifting” weight, as used to determine the lifting capacity of the davit, shall include full outfit and personnel (at least 6 persons at 210 lbs each), and shall reflect a service margin of not less than 5% of the boat weight.
 - 583-4.6.2 [RFP] Structural design shall incorporate maximum operational sea state accelerations with the fully loaded boat, and survival of storm condition accelerations with the boat stowed.
 - 583-4.6.3 [RFP] Davit launch capability from within the cutter boat is not required.
 - 583-4.6.4 [RFP] Stored energy or gravity operated systems shall launch the boat without recharge. Stored energy or manual power systems shall permit recovery of the boat under light load conditions in normal sea states in less than 5 minutes.
 - 583-4.6.4.1 [RFP] Emergency manual pumps and handles for secondary manual emergency use (the manual operation of winches and the manual recharge of accumulators) shall be portable devices for stowage inside the FRC-B.
 - 583-4.6.5 [RFP] The davit shall be fitted with a proximity switch based Anti-Two-Block control system.
- 583-4.7 [RFP] Davit hook system shall meet SOLAS III Part C Regulation 48 Rescue Boat requirements for Off –Load hooks, with the following exceptions:
 - 583-4.7.1 [RFP] Hydraulic hook release features, as may be required by SOLAS for multi-point lift systems, are not required for cutter boats.
 - 583-4.7.2 [RFP] Hooks and bails shall be provided with safety handles to keep hands away from the hook / bail interface.
 - 583-4.7.3 [RFP] The davit portion of the hook / bail interface shall reflect the davit rating including allowance for eccentric loading and operational acceleration factors.
- 583-4.8 [RFP] A davit(s) system shall have the following additional features:
 - 583-4.8.1 [RFP] Quick release hook capable of single person release when the Cutter Boat becomes waterborne.

- 583-4.8.2 [RFP] Variable winch speed controls. Winch speed shall be measured at full rated capacity. At a minimum, the winch speed control shall include stop, an intermediate speed, and full speed.
- 583-4.8.3 [RFP] Variable slew speed controls, if applicable.
- 583-4.9 [RFP] The davit system, if provided, shall be tested as follows:
- 583-4.9.1 [RFP] Structural Load Test: A static load test shall be conducted on the davit structure and foundation with a test weight equal to 220% of the rated capacity of the davit. The test weight shall be supported from the davit structure, and shall be held for a minimum of 10 minutes.
- 583-4.9.2 [RFP] Brake Test: A brake test shall be conducted on the hoisting equipment with a test weight equal to 150% of the rated capacity of the davit. The equipment winches shall grunt lift (at no specified speed) the test weight from the pier or water sufficient to take the total load and set the brake. The test load shall be held by the brake for 10 minutes. The test load shall be released and returned to ground. (CDRL 583-002)
- 583-4.9.3 [RFP] Dynamic Overload Test: A dynamic overload test shall be conducted on the hoisting equipment and/or winches with a test weight equal to 125% of the rated capacity of the davit. The davit system shall raise and lower the test weight between the water and highest lifting point at full speed. The davit system shall slew or breast the test weight between the launch and retrieval position and a position at least several feet inboard without the test weight hitting the hull. (CDRL 583-003)
- 583-4.9.4 [RFP] Rated Load Test: The Cutter Boat shall be fitted with waterbag type test weights distributed throughout the boat. The test weights shall be sufficient to bring the total weight of the Cutter Boat to 100% of the rated lifting load of the boat, as measured by a dynamometer.
- 583-4.9.4.1 [RFP] The davit shall lift the test weighted boat between the water, stowed position, and back to the water at least 5 times, continuously. The cycle time for launch and the cycle time for retrieval shall be recorded, averaged and recorded in machinery history.
- 583-4.9.4.2 [RFP] All functions of the davit shall be demonstrated, using a combination of stop, intermediate and full speeds to simulate actually launch and recovery operations.

583-5 [RFP] Inflatable Liferafts

- 583-5.1 [RFP] Inflatable liferafts with sufficient capacity for 100% of the accommodations shall be provided both port and starboard. These shall be USCG approved inflatable liferafts and shall be stowed in cylindrical containers and secured on the main deck or 01 deck with USCG approved hydrostatic releases and nylon-covered CRES cable tie-downs. The liferafts shall be stowed in separate cradle foundations, capable of being launched by gravity. The liferafts shall not be stowed together. All certifications shall be current for a minimum of 9 months after delivery.

SECTION 593. [RFP] ENVIRONMENTAL POLLUTION CONTROL SYSTEMS**593-1 [RFP] Vacuum Sewage Collection, Holding, and Transfer System**

- 593-1.1 [RFP] A vacuum sewage collection, holding, and transfer system (VCHT) shall be provided and installed in the FRC-B. The VCHT system shall be an approved Type III Marine Sanitation Device in accordance with [33 CFR 159](#). The system shall use less than 1.5 liters (0.34 gal) per flush.
- 593-1.2 [RFP] Vacuum flush type water closets shall flush waste under vacuum to a holding tank either through an accumulator tank or sewage powered eductor. Vacuum shall be maintained in the accumulator tank or the eductor suction piping and draw suction on the water closet when flushed. Potable water shall be used for flushing purposes. A back flow preventer shall be provided with each watercloset to isolate the potable water supply lines. The holding tank shall be drained with a macerating sewage pump or the sewage powered eductor. Provisions shall be made to allow the sewage pump discharge to be directed overboard. The holding tank shall be vented to atmosphere. Tank vents shall not be near ventilation intakes.
- 593-1.2.1 [RFP] The water closets shall use CRES bowl assemblies.
- 593-1.3 [RFP] The non-integral holding tank shall be fiber reinforced plastic (FRP) or 316L CRES. Framing for the holding tank(s), if used, shall be on the exterior of the tank, leaving a smooth interior. Lines and hoses shall have smooth interior bores. Flanged full port ball valves shall be installed in the holding tank penetration. All piping associated with the vacuum installation shall be long radius fittings. All materials used in this system shall be impervious to the effects of sewage. Odors shall not permeate the system boundaries. Connections from the potable water system shall have vacuum breakers.
- 593-1.3.1 [RFP] Capacity. The sewage (black water) system shall have a threshold holding capacity sized for 11 liters (3 U.S. gal) per day per permanent berthing accommodation, for the entire Independent Operations duration, in accordance with [COR Section 070](#) plus 25% to equal 95% of holding capacity. The sewage holding tank active volume shall be no less than 1,500 liters (396 gal).
- 593-1.3.2 [RFP] A sewage tank aeration system shall be provided.
- 593-1.4 [RFP] The garbage grinder drain (if fitted) shall be connected directly to the sewage tank. The garbage grinder shall drain by gravity and meet the minimum slope requirements in [COR SECTION 528](#).
- 593-1.5 [RFP] The system shall have a holding tank level indicating system. Lights shall indicate holding tank contents at 1/3 full, 2/3 full and 3/4 full. When the retention tank is 90% full, an automatic alarm shall sound. Means to silence the alarm shall be provided.
- 593-1.6 [RFP] If the vessel is in port, the sewage pump shall be capable of discharging the stored liquid and waste through a shore connection (located on the main deck) and on to a shore storage tank. The sewage discharge connection shall meet IMO requirements.

- 593-1.7 [RFP] If the vessel is at sea and in non-restricted waters, the sewage pump shall be capable of discharging the stored liquid and waste through the overboard discharge connection.
- 593-1.8 [RFP] Suitable metal warning plates shall be provided and permanently affixed adjacent to overboard discharge valves. The plates shall be worded as follows:

WARNING

SEWAGE SYSTEM OVERBOARD DISCHARGE

The opening of this valve, to discharge sewage and other effluents overboard, while operating in restricted waters, is a violation of Federal, State, and Local laws. This valve will be opened only with the permission of the Commanding Officer.

- 593-1.9 [RFP] The holding tank shall be vented to two locations to the weather in a location where odors are least likely to be offensive. Vents shall be installed on the port and starboard sides. Tank vents shall not be near ventilation intakes.
- 593-1.10 [RFP] Firemain seawater service shall be provided to the sewage equipment space for flushing the holding tank, flushing the sewage transfer piping and for space wash down. A pressure gauge shall be installed in the supply line to the sewage equipment space.
- 593-1.10.1 [RFP] The tank flushing system shall be installed such that seawater from the firemain shall be delivered through spray nozzles which will thoroughly spray the interior of the tank. The nozzle material shall be compatible with seawater. An in-line strainer shall be mounted in the tank flushing line prior to where the line enters the tank. Strainer mesh openings shall be smaller than the smallest spray nozzle orifice. A tank flushing cut-out valve shall be provided in the tank flushing line just upstream of the line strainer. The tank flushing system design shall be such that under no circumstances will the tank be subjected to pressure greater than the tank hydrostatic test pressure, nor shall the flow into the tank exceed the discharge capability of one connected pump.
- 593-1.10.2 [RFP] A fixed transfer piping flushing system shall be installed such that the seawater from the firemain will be supplied to the transfer piping just downstream of the sewage pump discharge valves or the plumbing waste water pump discharge valves. The system shall include a throttle type valve, a check valve, and a relief valve set to relieve at transfer piping design pressure, if it is less than the firemain design pressure.
- 593-1.10.3 [RFP] A 3/4-inch hose connection, from the firemain with flow control valve, shall be provided in the sewage equipment space for space wash down. A 3/4-inch hose, 15-foot minimum length, and storage rack shall be provided in the sewage equipment space.
- 593-1.11 [RFP] Free-standing coamings shall be provided around sewage equipment in the machinery room to contain leakage during operation or maintenance.
- 593-1.11.1 [RFP] The coaming shall be located to allow routine equipment operation and maintenance from outside the coaming.
- 593-1.12 [RFP] An electronic hydrogen sulfide (H₂S) gas detection system shall be installed in the sewage tank space and in each machinery space with VCHT equipment. The detection system shall comply with [NSTM, Chapter 593-4.3.2](#).

The local alarms portion of NSTM, Chapter 593-4.3.2.3 shall only be installed. The system is required even with the installation of a vacuum flush sewage system.

- 593-1.12.1 [RFP] A hazard label shall be installed at the access to the sewage tank space near the H₂S alarm system control unit indicator lights inscribed as follows:

WARNING
RED OR YELLOW LIGHT, AND BELL ALARM INDICATE
LEAKAGE OF TOXIC HYDROGEN SULFIDE (H₂S) GAS.
DO NOT ENTER SPACE WITHOUT RESPIRATORY
PROTECTION, OR UNTIL COMPARTMENT HAS BEEN
CERTIFIED GAS FREE BY THE GAS FREE ENGINEER.
DO NOT ENTER SPACE IF VENTILATION SYSTEM
IS NOT OPERABLE OR IF ANY ODOR OF
H₂S GAS IS DETECTED BY SMELL
(ROTTEN EGG ODOR).

- 593-1.12.2 [RFP] A hazard label shall be installed in a conspicuous location in each machinery space with VCHT equipment inscribed as follows:

WARNING
FLASHING RED LIGHT AND/OR BELL ALARM
INDICATE DANGEROUS PRESENCE OF TOXIC
LEVELS OF HYDROGEN SULFIDE (H₂S) GAS. LEAVE
SPACE IMMEDIATELY. IF ESCAPE IS DELAYED,
USE EMERGENCY ESCAPE BREATHING DEVICE.
FLASHING YELLOW LIGHT AND BUZZER ALARM
INDICATE PRESENCE OF LOW LEVELS OF TOXIC
H₂S GAS. LEAVE SPACE AND REPORT TO DCA.
LEAVE SPACE IMMEDIATELY IF VENTILATION SYSTEM
IS NOT OPERABLE, OR IF ANY ODOR OF H₂S GAS
IS DETECTED BY SMELL (ROTTEN EGG ODOR).

- 593-1.13 [RFP] The following information shall be provided on label plates at each deck discharge connection inscribed as follows:

ATTENTION
DO NOT DISCONNECT SEWAGE HOSE WHILE
IT IS PRESSURIZED. DEPRESSURIZE
HOSE AND SECURE DISCHARGE CUT-OFF
VALVE PRIOR TO DISCONNECTING HOSE

593-2 [RFP] Grey Water Systems

- 593-2.1 [RFP] Sewage Grey-Water System shall be connected to the drains listed in COR Section 528-2.2.
- 593-2.2 [RFP] The waste water (grey water) system shall have a threshold holding capacity sized for 76 liters (20 U.S. gal) per day per permanent berthing accommodation for for the Independent Operations endurance required in COR [Section 070-2](#); plus 15% of holding to equal 95% of capacity.
- 593-2.3 [A009] The grey water tank shall be CRES or FRP, non-integral, and shall have a smooth walled interior. A clean-out plate shall be provided and shall be

accessible from within the compartment. The grey water tank shall be provided with a vent to the weather.

- 593-2.4 [RFP] A dedicated pump, piping, and controls shall be provided to allow discharge of the grey water tank over the side and to the sewage holding tank and to a shore connection. The pump capacity shall be equal to or greater than 1.25 times the largest single inflow rate. The sewage pump shall be cross connected with the grey water system for emergency operations. Manual ball valves shall be provided to select the discharge path. Check valve(s) shall prevent back flow from sea and connected systems. The grey water tank shall be capable of manual and automatic pumping overboard or to shore. When the gray water tank reaches 80% full capacity, the contents shall be discharged automatically. An alarm shall sound in the pilothouse when the grey water tank reaches 90% full capacity.

593-3 [RFP] Solid and industrial waste pollution control systems

- 593-3.1 [RFP] The trash generation rate for sizing systems shall be 1.76kg (3.88 lb)/person/day and 20 liters (0.69 ft³)/person/day per permanent berthing accommodations.
- 593-3.2 [RFP] Regardless of the compliance strategy chosen, storage to meet the mission requirements of COR [Section 070](#) shall be provided for the holding of unprocessed trash.

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 600 – Outfit And Furnishings

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SECTION 600. [RFP] OUTFIT**600-1 [RFP] General**

- 600-1.1 [RFP] The FRC-B shall be designed, constructed, certified and classed to the requirements of the [ABS HSNC](#) Guide to meet the classification requirements in COR Section [070](#). Follow-on sections of the COR identify exceptions or additions to the ABS HSNC Guide requirements.
- 600-1.2 [RFP] All outfit shall be inspected and tested, as appropriate, prior to installation or loading.
- 600-1.3 [RFP] All outfit shall be Contractor furnished except for specified Government Furnished Equipment (GFE), to ensure that the FRC-B is fully outfitted and ready for sea prior to delivery.
- 600-1.4 [RFP] In addition to other items required by the COR, the outfit item list in Section J, Attachment 9 shall be procured and provided storage.
 - 600-1.4.1 [RFP] The estimated weight of the FRC-B outfit list is 6,000 Kg (13,228 lbf).

SECTION 602. [RFP] HULL DESIGNATION AND MARKING**602-1 [RFP] General**

602-1.1 [RFP] Markings, label plates, and identification plates shall be provided and installed as required by this and other Sections of the COR. Label plates shall be 316L CRES. Paper, plastic or cardboard label plates shall not be used. Label plates shall be located to ensure maximum visibility, and shall not be located where they can be obscured by furniture, pipes, or other fittings. Label plates installed in the weather or areas exposed to sea water shall have the mounting area sealed.

602-1.1.1 [RFP] Label plates shall be mechanically attached.

602-1.2 [RFP] Label plates showing working loads and date of test for weight handling equipment shall be installed on or near each weight handling device or fitting.

602-2 [RFP] Warning, Operating, and Instruction Plates

602-2.1 [RFP] Warning and instruction labels shall be installed for equipment including, but not limited to, the following;

602-2.1.1 [RFP] Main engines and generator sets.

602-2.1.2 [RFP] Pilothouse controls.

602-2.1.3 [RFP] Auxiliary machinery and equipment.

602-2.1.4 [RFP] Auxiliary systems, as necessary.

602-2.1.5 [RFP] Shore power connection (25mm (1 in) tall red letters).

602-2.1.6 [RFP] Fire pump and Bilge pump.

602-2.1.7 [RFP] Vacuum/Sewage Collection and Holding Tank System.

602-2.1.8 [RFP] Steering System.

602-2.1.9 [RFP] Emergency Steering System.

602-2.1.10 [RFP] Battery Charging System.

602-2.1.11 [RFP] Reverse Osmosis Desalinator.

602-2.1.12 [RFP] Fixed FM-200® Flooding System.

602-2.1.13 [RFP] Cutter Boat Launch and Recovery System.

602-2.1.14 [RFP] Oil Water Separator.

602-2.2 [RFP] The plate for each equipment shall contain instructions to cover the following as applicable:

602-2.2.1 [RFP] Safety Precautions.

602-2.2.2 [RFP] Starting Procedure.

602-2.2.3 [RFP] Operating Instructions.

602-2.2.4 [RFP] Securing Procedure.

602-2.2.5 [RFP] Emergency Procedure.

602-2.3 [RFP] Labeling location and design shall comply with [ASTM F1166](#).

602-3 [RFP] Visual Identification

- 602-3.1 [RFP] Visual Identification markings shall be in accordance with Chapters 11 and 12 of [COMDTINST M10360.3C](#), Coatings and Color Manual. The details shall be developed for the placement of the CG diagonal stripes, the "U. S. Coast Guard", the cutter's name, and hull number on the FRC-B. The hull numbers and names will be provided by the Contracting Officer. All numbers and letters shall be decals; a complete duplicate decal set shall be provided. USCG emblems shall be decals.
- 602-3.2 [RFP] The surfaces where decals are to be applied shall be prepared in accordance with Chapter 5 of [COMDTINST M10360.3C](#). On metal hulls, the Contractor shall provide, by the use of intermittent weld beads, identifying marks indicating the location for all decals and hull markings. The red, white and blue stripes are to be outlined with continuous welding.
- 602-3.3 [RFP] The painted waterline shall comply with Chapter 11 and Appendix A of [COMDTINST M10360.3C](#).
- 602-3.4 [RFP] If the FRC-B hull is FRP then similar permanent markings shall be applied to the hull.

602-4 [RFP] Special Label Plate

- 602-4.1 [RFP] If the hull or superstructure is constructed of aluminum, a label plate with upper case letters 6mm (0.24 in) in height shall be installed in the pilothouse containing the following information:

WARNING

MERCURY OR MERCURY BASED COMPOUNDS WILL RESULT IN SEVERE CORROSION TO THE ALUMINUM IN THIS VESSEL. MERCURY IN A PROPORTION AS SMALL AS ONE PART PER MILLION WILL RESULT IN EXTREME CORROSION. DO NOT PAINT ALUMINUM WITH EITHER MERCURY OR COPPER BASED PAINTS. DO NOT PAINT AREAS LEFT UNPAINTED. KEEP MERCURY FILLED INSTRUMENTS (SUCH AS THERMOMETERS), MERCURIC BATTERIES AND AMMUNITION HAVING FULMINATE OR MERCURY PRIMERS OFF THE CUTTER. BE CERTAIN THAT NO ITEM BROUGHT ON BOARD OR USED FOR REPAIR OR PAINTING CONTAINS MERCURY OR MERCURIC COMPOUNDS.

602-5 [RFP] Builders Plate

- 602-5.1 [RFP] A label plate with engraved upper case letter 6mm (0.24 in) in height shall be installed in the mess deck. The material of label plates shall be brass. The label plate shall contain the following information:

Cutter Name
Hull No.
Meter FRC
Built for the USCG
Builder, City, Month, Year

Where ## is the length of the cutter in meters.

602-6 [RFP] Damage Control Classification and Markings

602-6.1 [RFP] General

602-6.1.1 [RFP] Damage Control Classifications and Markings shall be provided as required below, and by the U. S. Coast Guard Naval Engineering Manual (NEM), [COMDTINST M9000.6E](#).

602-6.2 [RFP] Compartment and Deck Numbering

602-6.2.1 [RFP] The Compartment and Deck Numbering System shall comply with [NSTM S9086-CN-STM-020/CH-079V2R2](#), Vol.2, Chapter 079-21.3.2.

602-6.3 [RFP] Access Closure Numbering

602-6.3.1 [RFP] Access closures (doors, hatches, manholes, and scuttles) shall be numbered in accordance with the numbering system for compartments, except that the letter designating use shall not be included.

602-6.4 [RFP] Damage Control Classifications and Markings

602-6.4.1 [RFP] Damage control classifications shall be assigned in accordance with [NSTM Chapter 079 Volume 2](#) and submitted to the Contracting Officer for approval ([CDRL 602-001](#)). Damage control classification markings shall be applied in accordance with [COMDTINST M10360.3C](#) and NSTM Chapter 079 Volume 2. In the event of a conflict, COMDTINST M10360.3C takes precedence over NSTM Chapter 079. Compartment Check-Off Lists (CCOLs) shall be prepared in accordance with [COMDTINST M9000.6E](#), Chapter 079 ([CDRL 602-002](#)) and submitted to the Contracting Officer for approval. The approved CCOLs shall be printed on paper and laminated to protect it from the elements. The CCOLs shall be mounted in the appropriate locations.

602-7 [RFP] Miscellaneous Labels and Marking

602-7.1 [RFP] Special Designation and Marking

602-7.1.1 [RFP] Photoluminescent marking shall comply with Chapter 10 of [COMDTINST M10360.3C](#).

602-7.2 [RFP] In addition to the label plates required herein, other information required for the operation of the FRC-B, such as the designation of stowage locations, lubrication instructions, warnings, and the designation of access panels, shall be installed.

SECTION 603. [RFP] DRAFT MARKS**603-1 [RFP] General**

- 603-1.1 [RFP] Draft marks/figures shall comply with [NSTM S9086-CN-STM-010/CH-079V2R2](#), Chapter 079-13.2 and [46 CFR 97.40-10](#) in English units.
- 603-1.2 [RFP] Draft marks shall be in accordance with [46CFR196.40-10](#). Pitch and point for letter and numerals shall be scaled from [Coast Guard fleet drawing FL-2804-15](#). Numerals shall be painted black above the boot topping and white on the boot topping and below.
- 603-1.3 [RFP] On metal hulls, numerals shall be outlined by a running bead of weld. If the hull material is FRP, then similar permanent numeral markings shall be applied on the hull.
- 603-1.4 [RFP] Limiting draft marks shall be installed at locations specified by the Contracting Officer. The form of these marks shall be as shown in [COMDTINST M10360.3C](#), Chapter 12.
- 603-1.5 [RFP] Draft marks and the limiting draft marks shall be installed prior to launching.
- 603-1.6 [RFP] Prior to launching, the draft marks shall be certified in preparation for cutter stability testing in accordance with [COMDTINST M9000.6E](#). Certification and supporting documentation shall be submitted to the Contracting Officer that the forward and after draft marks and the limiting marks are accurate to within 0.125 inches. ([CDRL 603-001](#))

SECTION 604. [RFP] LOCKS, KEYS, AND TAGS**604-1 [RFP] General**

- 604-1.1 [RFP] Locks, staples, keys, and hooks shall be provided as necessary for doors, hatches, and manholes providing primary access to the interior of the craft from the weather.
- 604-1.2 [RFP] A latching device operable from below shall be provided for all escape scuttles. The latching device shall be operable without a key or wrench.
- 604-1.3 [RFP] Locks shall be provided for food storage areas, the galley, equipment and repair parts lockers, damage control equipment storage areas, berth lockers, and clothes lockers.
- 604-1.4 [RFP] Hasps and staples shall be fitted so that when the door is opened or closed, padlocks cannot be caught between the door and the door frame.
- 604-1.5 [RFP] Each lock shall be provided with two keys. Two master keys shall be provided for opening all locks except crew lockers and berth lockers.
- 604-1.6 [RFP] Specific locking requirements for C4ISR equipment and weapon systems are addressed in COR Sections [400](#) and [700](#) respectively.

604-2 [RFP] Padlocks

- 604-2.1 [RFP] High, medium, and low security type locks shall be installed as specified by [COMDTINST M5530.1C](#). All padlocks shall be fitted with clevis and chain.

604-3 [RFP] Key Tags

- 604-3.1 [RFP] Keys, including duplicate keys, shall be provided with key rings and brass tags, engraved or stamped with the necessary identifying information.

604-4 [RFP] Key Locker

- 604-4.1 [RFP] A lockable key locker shall be provided in the Executive Officer's stateroom. The locker shall be of the size required to provide a separate hook for the keys to each lock. Each key hook shall be labeled to identify the purpose of the key.

SECTION 605. [RFP] RATPROOFING**605-1 [RFP] General**

- 605-1.1 [RFP] Rodent proofing shall be incorporated in accordance with [Public Health Service Publication No. 393](#), "Handbook Sanitation of Vessel Construction" and the USPHS and MARAD's Joint Publication No. [P 161019](#) "Ratproofing of Ships" which show acceptable methods and details for ratproofing and preventing access and infestation of the FRC-B by rodents.
- 605-1.2 [RFP] Rodent proofing is not required in compartments such as tanks, voids, and similar compartments which do not contain fittings or structures which could admit or harbor rodents. Elsewhere in the FRC-B, rodent proofing shall be provided.
- 605-1.3 [RFP] Bulkheads forming boundaries of commissary compartments, storerooms, and other storage compartments, machinery compartments, electronic and electrical compartments, and compartments where the existence of rodent infestation could not be readily detected shall be constructed to prevent the passage of rodents into these compartments.

605-2 [RFP] Detail Requirements

- 605-2.1 [RFP] Unless otherwise specified, circular openings shall not exceed 10mm diameter and rectangular openings shall be limited to 10mm in the smaller direction.
- 605-2.2 [RFP] Inaccessible pockets in foundations shall be closed with sheet metal or screens.
- 605-2.3 [RFP] Battens, bins, shelves, furniture, lockers, racks, and similar equipment shall be fitted to eliminate pockets inaccessible to personnel. If this is not possible, such pockets shall be closed to exclude rodents.
- 605-2.4 [RFP] Tunnels for wiring and pipes shall have closing devices that prevent rodent passage between compartments.
- 605-2.5 [RFP] Electric and electronic equipment with holes larger than 10mm shall be fitted with temporary covers after installation on the FRC-B to prevent rodents from nesting in the equipment, thereby avoiding possible damage to the equipment by rodents during construction of the FRC-B.
- 605-2.6 [RFP] Rat guards shall be aluminum and constructed in accordance with [ASTM F1099M-98](#) and shall be provided for all mooring lines.
- 605-2.7 [RFP] Louvers in joiner bulkheads' and sheathing shall be rodent proof.

SECTION 611. [RFP] HULL FITTINGS**611-1 [RFP] General Requirements**

- 611-1.1 [RFP] All hull fittings shall be designed, constructed and placed in accordance with the Systems Safety and Human Engineering Programs as well as [ASTM F1166](#).
- 611-1.2 [RFP] Cast iron shall not be used. Plastics or composites may only be used for lightweight lines such as signal halyards.
- 611-1.3 [RFP] Any fittings not welded to structure shall be bolted. Sheet metal screws, rivets or fasteners threaded into structure or into threaded inserts in structure shall not be used.
- 611-1.4 [RFP] Fittings bolted to structure shall be embedded in non-hardening compounds in accordance with COR [SECTION 078](#).
- 611-1.5 [RFP] All chocks shall be closed type.
- 611-1.6 [RFP] All deck fittings shall be designed with a factor of safety of 1.1 on the yield strength of the material based on the breaking strength of the line used on it. See COR [SECTION 582](#) for lines sizes used.

611-2 [RFP] Padeyes

- 611-2.1 [RFP] Padeyes, not specified elsewhere in this COR, shall be provided in number, location, and capacity as necessary for convenient and rapid handling of the Cutter Boat, the anchors, Jacob's ladder, brow, and scramble net(s).
- 611-2.2 [RFP] Padeyes, not specified elsewhere in this COR, shall be provided in number, location, and capacity as necessary for machinery maintenance. Three portable type padeyes shall also be provided that can be used throughout the FRC-B. The use of the portable padeyes shall not cause damage to the structural members of the FRC-B when used up to and including 150% of their safe working load.
- 611-2.3 [RFP] Padeyes shall be so located and installed that the load will be applied in the plane of the eye.
- 611-2.4 [RFP] Padeyes or tiedowns shall be recessed if placed on a walking surface, or on a vertical surface in a position that could contact persons moving quickly around them.
- 611-2.5 [RFP] Padeyes shall be labeled with their safe working load capacity.

611-3 [RFP] Cleats and Eyebolts

- 611-3.1 [RFP] Cleats and fairleads shall be installed for the proper leads and belaying of required signal halyards and rigging.
- 611-3.2 [RFP] Cleats shall be provided for checking steadying lines, including the sea painter, for the Cutter Boat during boat handling operations if required.
- 611-3.3 [RFP] Sockets and supporting structure shall be designed to a safety factor of two (2) for the largest load applied to the eyebolt.
- 611-3.4 [RFP] All cleats, bits and chocks except those used for signal or flag halyards shall be sized in accordance with COR Section [582](#).

611-4 [RFP] Testing Requirements

- 611-4.1 [RFP] All load carrying members, including davits, cleats, padeyes, eyebolts, lift frames, etc. shall be tested to 150% of the maximum safe working load in accordance with Chapters 570, 573 & 589.C of [COMDTINST M9000.6E](#). Test results and supporting documentation shall be submitted in accordance with [CDRL 611-001](#).

SECTION 612. [RFP] LIFELINES AND LIFERAILS**612-1 [RFP] Lifelines and Liferails**

- 612-1.1 [RFP] Liferails or lifelines shall be installed along all boundaries whenever there is a danger of personnel falling overboard, falling to a level 610mm (24 in) or greater in the FRC-B. They shall also be installed whenever there is a danger of personnel becoming enmeshed with operating machinery. The liferails or lifelines shall be closed at the jack staff to prevent personnel from falling over the side. Storm rails shall be installed in all passages and compartments wherever the crew has normal access. If an open ladder well is provided for access to the bridge, a "swing door" type gate with automatic closing mechanism shall be provided at the top of the ladder to prevent personnel from falling to the lower level in rough sea conditions.
- 612-1.2 [RFP] Openings in lifelines shall be provided at the embarkation locations for the FRC-B and for the Cutter Boat. These openings shall have braced stanchions on either side and shall be closed with three tiers of 316L CRES 5/16" chain fastened with quick release closures.
- 612-1.3 [RFP] Lifelines shall be no smaller than 9.5mm (0.37 in) diameter Aramid fibers (tradename Kevlar) shall conform to [SAE/ANSI Standard AMS 3901](#) and the appropriate detailed SAE/ANSI specification for the synthetic fiber rope selected (to minimize electro-magnetic interference (EMI)), and fitted with a turnbuckle at one end and a screw pin shackle at the other. Stanchions shall have pigtails (1/4" diameter minimum) to hold lifelines in place and provide for easy removal.
- 612-1.4 [RFP] Portable lifelines and stanchions shall be fitted as necessary to allow for proper handling of the Cutter Boat, the anchor, in the line of fire of the weapons and for the Jacobs ladder. Portable lifeline stanchions shall be retained with CRES toggle pins. Toggle pins shall be provided with CRES wire rope attached to the portable stanchion to prevent loss of the pin.
- 612-1.5 [RFP] Liferails, storm rails and stanchions shall be 316L CRES, aluminum or fiberglass reinforced plastic. Fiberglass reinforced plastic used for liferails, storm rails and stanchions shall be specifically manufactured for use as railings.
- 612-1.6 [A010] Liferails and lifelines shall be three-course. The opening below the lowest course shall not be more than 230mm (9 in). The upper courses shall be evenly spaced and not be more than 381mm (15 in) apart. The height of lifelines shall be at least 1,003.3mm (39.5 in) measured from the deck to the center of the top lifeline/liferail. Areas proposed for a height less than 1,003.3mm (39.5 in) require Contracting Officer approval.
- 612-1.7 [RFP] Portable stanchions shall be bonded in accordance with COR Section [300-3.6.1](#).
- 612-1.8 [RFP] Openings between adjacent liferails or lifeline sections or an end section and adjacent to the structure shall not be greater than 120mm (4.72 in).
- 612-1.9 [RFP] Railing clearance, size, and placement shall be in accordance with [46 CFR 42.15-75\(b\) - \(d\)](#).

SECTION 613. [RFP] COVERS, CURTAINS AND HALYARDS**613-1 [RFP] General**

- 613-1.1 [RFP] Covers shall have stenciled markings to indicate its use and location. All covers shall fit neatly without wrinkles or pockets and shall be fitted with accessories as necessary for a complete installation.

613-2 [RFP] Covers

- 613-2.1 [RFP] Covers shall be provided for items exposed to the weather such as searchlights, anchor windlass and control station, stokes litter, Alidade, davit control unit (if provided), Cutter Boat recovery winch (if provided), and other deck machinery. An all around cover and a console cover shall be provided for the Cutter Boat.
- 613-2.2 [RFP] A cover shall be provided for the drop pumps to minimize exposure to the elements.
- 613-2.3 [RFP] A cover shall be provided for the P-100 pump enclosures to minimize salt water intrusion.

613-3 [RFP] Curtains

- 613-3.1 [RFP] Blackout curtains shall be installed where required to prevent light from entering the pilothouse from adjacent compartments at night. Blackout curtains shall be matte black and shall be fitted to exclude all light emission from or into the compartment and permit sliding the curtain to an open or closed position. Straps shall be provided to retain curtains in the open position.
- 613-3.2 [RFP] Smoke curtains shall be provided for all smoke boundaries, custom fitted to each opening, and installed in accordance with [COMDTINST 9664.1B](#).
- 613-3.3 [RFP] Curtains shall be installed in all portlights and windows, with the exception of those in the pilothouse, to enable the setting of darkened ship.

613-4 [RFP] Material and Construction

- 613-4.1 [RFP] Material for covers shall be 100% Saturation Solution-Dyed Acrylic or Dacron with a polyurethane undercoating meeting at least the minimum characteristics of flame retardant properties, breaking strength, tear resistance, hydrostatic resistance, and UV resistance possessed by Sunbrella® Plus marine fabric. All stitching shall be waterproofed.
- 613-4.1.1 [RFP] Covers shall be Sunbrella® Ocean Blue, #4679, or equal in color.
- 613-4.2 [RFP] Blackout and Privacy (COR Section 640-3.2.3.) curtains shall be fabricated of fire resistant cloth with a single fold with a double stitched seam for use with a suspension system comprised of a removable aluminum rod 1" OD with 1/16" wall thickness. The curtain rod shall be held in place by captive fasteners.

613-5 [RFP] Halyards

- 613-5.1 [RFP] Flag and signal halyards and associated fittings shall be provided and installed.

- 613-5.2 [RFP] Halyards shall be ¼" diameter urethane coated parallel cored of polyester fiber contained within a helically wrapped polyester tape and covered by a white and blue flecked braided jacket of both spun and filament polyester.
- 613-5.3 [RFP] Turning blocks for halyards shall be sized according to the halyard diameter.

SECTION 621. [RFP] NON-STRUCTURAL BULKHEADS AND PARTITIONS**621-1 [RFP] General Requirements**

- 621-1.1 [RFP] Except where structural bulkheads are required for strength or tightness, non-structural bulkheads shall be provided for bounding and subdividing such compartments as passages, quarters, galley, and storerooms.
- 621-1.2 [RFP] Non-structural bulkheads shall be constructed of noncombustible materials in compliance with the [IMO HSC Code](#) (e.g. Nomex core panels equal to Hexgard I manufactured by Hexcel Corp. and Firelam I manufactured by Ciba-Geigy).
- 621-1.2.1 [RFP] Core shall be a minimum 6mm (0.24 in) cell size, 50 Kg/m³ (3.12 lbs/ft³) density and in compliance with [IMO HSC Code](#), Chapter 7 and [SAE-AMS-C-81986](#).
- 621-1.2.2 [RFP] Facings shall be 181 style woven fiberglass, pre-impregnated with modified phenolic resin. The resin content of the pre-laminated fabric shall be sufficient to maintain structural integrity of the panels as defined herein.
- 621-1.2.3 [RFP] Joiner panels shall have 0.75mm (0.023 in) thick high pressure fire retardant laminate (HPFRL) decorative finish on any exposed side of the panel.
- 621-1.2.4 [RFP] Minimum overall panel thickness, including decorative HPFRL shall be:
- 621-1.2.4.1 [RFP] 17.4mm (0.69 in) for panels with HPFRL on both sides.
- 621-1.2.4.2 [RFP] 16.6mm (0.65 in) for panels with HPFRL on one side.
- 621-1.2.4.3 [RFP] 15.9mm (0.63 in) for panels without HPFRL
- 621-1.2.5 [RFP] Panels, including HPFRL shall be bonded together utilizing the pre-impregnated resins for adhesives.
- 621-1.3 [RFP] Joiner panels shall comply with the [IMO HSC Code](#).
- 621-1.3.1 [RFP] The panel, when tested in accordance with [SAE-AMS-STD-401](#) shall demonstrate the following minimum properties at 33.9°C (93°C):

Table 621-1

	With Decorative Finish	Without Decorative Finish
Edgewise Compression Strength	12.4 MPa (1,798 PSI)	6.2 MPa (899 PSI)
Core Shear Strength	0.7 MPa (102 PSI)	0.7 MPa (102 PSI)
Flatwise Tension Strength	1.0 MPa (145 PSI)	1.0 MPa (145 PSI)
Beam Flexure Strength	1.9 MPa (276 PSI)	1.4MPa (203 PSI)

- 621-1.3.2 [RFP] With a 675 N (152 lbf) weight attached in the center with eight 6mm (0.24 in) fasteners through both face sheets, a simulated bulkhead system consisting of three 1,250mm (49.2 in) by 2,130mm (83.9 in) panels shall withstand a temperature of 232°C (449.6°F) with no detachment of the

weight. The panel deflection at 121°C (249.8°F) shall not exceed 12mm (0.472 in) at any point

- 621-1.4 [RFP] Joiner bulkhead panels shall meet the testing requirements of the FTP Code.

621-2 [RFP] Installation

- 621-2.1 [RFP] All exposed aluminum trim, furring members, casings, H-posts, pilasters, and other such structures associated with the installation of non-structural bulkheads, shall be finished with baked enamel as required for enameled furniture surfaces on [USCG Drawing Number FL-3306-25, Sheet 2](#). They shall be 5000 series aluminum, and designed to hold the panel in place. All aluminum members shall be isolated from steel structure to prevent galvanic action.
- 621-2.2 [RFP] A tracking system shall be specifically designed for joiner bulkheads and liners. A modified 22.22mm (0.87 in) tracking system will not be accepted. H-posts shall be snapped together similar to standard 22.22mm (0.87 in) post. In wet spaces such as the galley, and all sanitary compartments, the tracking system shall be CRES 316 or 316L if welded. Where CRES is exposed, it shall be Number 4 mirror finish or equivalent for uniform appearance.
- 621-2.3 [RFP] Z-bars shall be installed to support the bottom edge of joiner divisional bulkheads and joiner linings. Z-bars shall also be installed to hold the upper edge of the panel to the curtain plate. The Z-bar shall be installed to allow removal of a bulkhead panel by raising it enough to clear the bottom support. The material of the Z-bars shall be the same as that of the deck or overhead structure to which it is attached. The bounding bars shall be CRES 316 or 316L if welded where used adjacent to wet spaces. For dry spaces the bounding bars may be of mild steel or aluminum.
- 621-2.4 [RFP] Bulkhead panels and joiner linings in all wet spaces, including all sanitary compartments and the galley shall be embedded in the support channels by liberal use of bedding compound complying with COR Section [078](#).
- 621-2.5 [RFP] Hinged access panels latched with recessed quick-acting captive fasteners operable without tools shall be provided in linings for normal or emergency access to valves, dampers, electrical junction boxes, stuffing tubes, electrical transits and other such items.
- 621-2.6 [RFP] The joiner lining system in other than wet spaces shall be designed and constructed so that any panel of a joiner bulkhead or lining may be removed without removing adjacent or abutting panels. Hardware required to be removed for panel removal shall be attached by screws to ensure reusability.
- 621-2.7 [RFP] The maximum mass of equipment mounted to joiner bulkheads shall not exceed 70 kg. Heavier equipment shall be mounted on a structural foundation (See COR [SECTION 180](#)). Fasteners used to mount to the joiner panels shall be standoff and tee nuts. All fasteners shall be installed through the entire joiner panel. Fasteners and backing plates shall be used to distribute the load over the area of attachment on the joiner panel.
- 621-2.8 [RFP] Electrical equipment mounted on non-structural bulkheads shall be grounded.
- 621-2.9 [RFP] Joiner bulkheads shall have fire stops extending from the top of the bulkhead to the underside of the deck above.

- 621-2.10 [RFP] Non-structural bulkheads and associated hardware shall be free from sharp or rough edges. Protective coverings shall not be removed until after work in the compartment is complete.

SECTION 622. [RFP] FLOOR PLATES AND GRATINGS**622-1 [RFP] General**

- 622-1.1 [RFP] Floor plates, gratings, and platforms shall allow for access to and operation of all major machinery, equipment, and controls in machinery compartment(s), lazarette and forepeak. Handrails shall be installed at the periphery of floor plates and gratings where required for personnel safety. Where raised sections are necessary, they shall be joined with steps and the associated safety rails.
- 622-1.2 [RFP] Floor plates in machinery compartment(s) shall support a load of 7 kPa (1.02 PSI). Gratings in lazarette and forepeak shall support a load of 5 kPa (0.73 PSI).

622-2 [RFP] Floorplates and Gratings

- 622-2.1 [A010] Floorplates shall be grit-topped fiberglass plates, [Fibergate Corporation FiberPlate type IFR](#) or a similar fiberglass industrial flooring product or a product manufactured as industrial flooring with equivalent corrosion, strength, weight and flame spread and fuel contribution rating. Non-slip treads shall be installed on floor plates in way of doors and passages. Floor plates, supports, and coamings shall allow for machinery and equipment installation and removal. Supports shall be fitted about permanent openings. The plating shall be supported to limit deflection to one part in 200 of span under the load listed in COR Section 622-1.2.
- 622-2.2 [RFP] The platform in the lazarette and the forepeak shall be [Fibergate Corporation type IFR](#) or a similar fiberglass product manufactured as industrial flooring with equivalent corrosion, strength, weight and flame spread and fuel contribution rating. Grating, supports, and coamings shall allow for machinery and equipment installation and removal. Supports shall be fitted about permanent openings. The grating shall be supported to limit deflection to one part in 200 of span under the load listed in COR Section 622-1.2.
- 622-2.3 [RFP] The floor plates and grates shall be secured to their supports with 316 CRES ¼ turn, hand-actuated, bail type fasteners, such as [DZUS BJR5-SS](#), with slip-on spring receptacles, such as [DZUS SL-5](#), or equal. Products offered shall be equivalent in the characteristics of material, type of restraint, ease of operation, and resistance to dislocation. Panel length shall not exceed 1m (39.37 in) in any direction.
- 622-2.4 [RFP] Hinged plates shall be furnished and installed for access to valves, manifolds and rotating machinery or other equipment requiring routine inspection in the machinery compartment(s) that is located below the floor plates. Hinged plates and the hardware supporting them shall be designed to carry the local loads imposed by walking on them. Flush type grabs shall be provided for lifting these plates. Label plates indicating valve service, valve number and damage control classification shall be fastened to both sides of the hinged plate (See COR SECTION 602).

SECTION 623. [RFP] LADDERS, GRABRODS, AND GANGWAY**623-1 [RFP] General**

- 623-1.1 [RFP] Ladders shall be designed and located in accordance with [ASTM F1166](#) throughout the FRC-B.
- 623-1.2 [RFP] All ladders shall be removable, bolted in place and fitted with handrails or grabs.
- 623-1.3 [RFP] All ladders and handrails shall be located so as not to interfere with the opening and closing of hatches, doors, gratings, scuttles, or manholes.
- 623-1.4 [RFP] Inclined ladders or stairs with full treads shall have leading edge marking as specified in [COMDTINST M10360.3C](#).

623-2 [RFP] Ladder Details

- 623-2.1 [RFP] Treads shall be bolted on and shall be individually replaceable.
- 623-2.2 [RFP] Backs of internal inclined ladders shall have dirt shields. These shall be set back far enough to provide adequate toe space.
- 623-2.3 [RFP] Handrails shall be installed on each side of inclined ladders. Handrails shall be 38.1mm (1-½ in) nominal diameter pipe. The top flange of the inclined ladder rails shall be stiffened in way of the railing posts.
 - 623-2.3.1 [RFP] Handrails shall have a minimum of 51mm (2 in) of clearance between the handrails and any other fixed structure.

623-3 [RFP] Inclined Ladders

- 623-3.1 [RFP] Inclined ladders shall be installed where considerable personnel traffic is anticipated, such as between decks. Minimum tread widths of the inclined ladders shall not be less than 600mm (23.6 in).
- 623-3.2 [RFP] Slope of interior inclined ladders shall be between 50° and 60° with the baseline and exterior inclined ladders shall not exceed 50° with the baseline.
- 623-3.3 [RFP] Ladder landings at the top and bottom of inclined ladders shall have a minimum clear length of 900mm (35.43 in). Where 900mm (35.43 in) length ladder landings are not possible due to structural restrictions, the top landing length may be reduced to a minimum of 760mm (29.92 in).
- 623-3.4 [RFP] Unguarded openings between the upper end of handrails, chains, or ropes of inclined ladders and adjacent rails or structures of the upper level, shall be kept to a minimum, and shall in no case be greater than 120mm (4.72 in).
- 623-3.5 [RFP] The steps of the weather deck ladder to the pilothouse shall be painted in accordance with [COMDTINST M10360.3C](#), except that the color shall be black.
- 623-3.6 [RFP] Ladders shall be fitted with Type I Full Treads meeting [MIL-T-24634](#) (SH).

623-4 [RFP] Vertical Ladders

- 623-4.1 [RFP] Vertical Ladders shall be installed to access the pilothouse top, escape scuttles.
- 623-4.2 [RFP] Vertical Ladders shall be bolted to the structure.

- 623-4.3 [RFP] Vertical Ladders shall be equipped with either a climber safety rail or cage as needed in accordance with the requirements of [ASTM F1166](#).

623-5 [RFP] Ladder Rungs

- 623-5.1 [RFP] A removable ladder shall be installed on the transom. The ladder shall be attached to the hull by bolts. Each bolt will be secured using 316L CRES washers on each end of the bolt and a 316L CRES nylock nut. The hull shall be fitted with foundations for the bolts at the top and bottom of the ladder, accessible, without the use of a diver or swimmer, while the vessel is waterborne. The ladder shall be made of aluminum and shall be isolated from the hull.
- 623-5.2 [RFP] Ladder rungs shall be built into the mast structure. The lowest rung of each ladder shall have a unique tread pattern (such as a weld bead) for easy differentiation from the other rungs when descending the ladders.

623-6 [RFP] Grabrods

- 623-6.1 [RFP] Grabrods shall be fitted in accordance with [ASTM F783-88](#) where they will aid personnel in ascending, descending, or stepping from ladders, where considered necessary along passageways, on weather sides of deckhouse, and the head of all vertical and inclined ladders. Grabrods shall also be placed on the pilothouse furnishings and pilothouse overhead in all traffic areas.
- 623-6.2 [RFP] Horizontal grabrods shall be fitted in accordance with [ASTM F783-88](#) on the coamings of all companion hatchways, in way of incline ladders, opposite the ladder to afford support to persons descending the ladder. These grabrods shall not obstruct the clearance requirements for the ladder.

623-7 [RFP] Portable Boarding Ladder

- 623-7.1 [RFP] The FRC-B shall be provided with one Jacob's ladder that meets the requirements of [46 CFR 160.017](#). The Jacob's ladder shall be of such length that it will reach below the water's edge when secured from the highest point of the main deck edge.

623-8 [RFP] Gangway

- 623-8.1 [RFP] A gangway shall be provided for each FRC-B and fittings and provisions on the FRC-B to allow it to be used.
- 623-8.1.1 [A009] The length of the gangway shall be at least 3.7m (12 ft) in length and shall comply with applicable OSHA regulations for shipyard access to the FRC-B. The gangway shall stow with all of its components aboard the FRC-B in a position where it will not interfere with any operation and shall have dedicated fittings to secure it at sea.
- 623-8.1.2 [RFP] The gangway shall be fastened to the FRC-B such that movement shall be allowed in both the vertical and horizontal directions. The quayside end of the gangway shall be fitted with wheels to allow free movement of the FRC-B as it rises or falls or traverses fore and aft.
- 623-8.1.3 [A009] The gangway shall be aluminum or fiberglass or a combination of these materials with a non-skid walking surface integral to the material of the walkway. Each side rail shall be either removable or foldable as a single piece for flat stowage at sea. The side rails shall be fitted with padeyes or other fitting to allow a 0.9m (35.43 in) high canvas side curtain at least three-quarters the length of the gangway with the FRC-B's name and number to be

fitted between the gangway walking surface and the top course of the side rail.

SECTION 624. [RFP] NON-STRUCTURAL CLOSURES**624-1 [RFP] General Requirements**

- 624-1.1 [RFP] This Section covers joiner doors and other miscellaneous non-structural closures not specified in COR [SECTION 071](#) and [SECTION 167](#).
- 624-1.2 [RFP] Unless otherwise specified herein, door mechanisms (hinges, closers, etc.) shall permit doors to swing up to 180°. Doors shall open flush to adjacent bulkheads.
- 624-1.3 [RFP] All doors unless otherwise specified shall have hold-open fittings and bumpers. A positive latching device shall be provided for doors to hold them open against the bulkhead. When in the weather, such latching devices shall withstand the effects of wind and FRC-B motions as specified in COR [SECTION 070](#).
- 624-1.4 [RFP] Operation of doors shall not cause obstructions to other spaces or passageways. Doors shall open inwards vice outward into passageways.

624-2 [RFP] Joiner Doors

- 624-2.1 [RFP] Joiner doors shall be a minimum 50.8mm (2 in) hollow or honeycomb metal, flush type doors. They shall be sound dampened and fire insulated such that they have the same Structural Fire Protection (SFP) rating as the boundary in which they are fitted. Backing plates to prevent failures due to FRC-B motions shall be provided at the point of attachment of hinges, door closers, and latching devices.
- 624-2.2 [RFP] Doors shall be provided with nylon-bushed, CRES butt hinges with button tip, loose fit CRES pins. Where locks are required and hinge pins are exposed outside the compartment, tight or fixed pins shall be provided.
- 624-2.3 [RFP] Clear head room is described in COR [Section 071-2](#). Sill heights shall be compatible with deck sheer and camber. Sill heights shall provide a minimum of approximately 6mm (0.24 in) clearance of door above floor covering throughout the swing. Sills shall be integral with frames and shall have CRES sill covers flanged down to cover edges. The door that accesses the sanitary compartment shall have a minimum sill height of 100mm (3.94 in).
- 624-2.4 [RFP] Louvers shall not be installed in joiner doors except when required by air conditioning and ventilation. Ventilation louvers shall be provided at top and bottom of doors for built-in lockers. Ventilation louvers shall be provided at the bottom only for the door to the sanitary compartments.
- 624-2.5 [RFP] Door frames for joiner doors shall be compatible with the bulkhead material.
- 624-2.6 [RFP] Pre-treatment and finish for doors and frames shall be in accordance with finish requirements in COR SECTION 631.
- 624-2.7 [RFP] Joiner doors to all staterooms and berthing compartments and to working compartments that do not have an emergency escape route shall be fitted with kick-out panels.
- 624-2.8 [RFP] Interior access to the pilothouse shall have closures insulated to reduce the acoustic and thermal transmission of the FRC-B's interior when the pilothouse weather doors are open.

SECTION 625. [RFP] WINDOWS AND PORTLIGHTS**625-1 [RFP] General Requirements**

- 625-1.1 [RFP] All fixed window and portlight installations shall be watertight except that opening windows in the pilothouse shall be weathertight. Window glass shall be fitted in frames and sealed with bedding compound in a weather-resistant rubber channel.
- 625-1.2 [RFP] All windows and port lights shall be designed to the pressure loading of the adjacent structure (see COR [Section 150](#)) with a minimum factor of safety 3.
- 625-1.3 [RFP] All windows shall be constructed using laminated safety glass.
- 625-1.4 [RFP] Windows shall be mounted to prevent vibration and rattling, and to provide a cushioning effect to protect the glass, as far as practicable, from damage due to shock caused by installed weapons blast.

625-2 [RFP] Pilothouse Windows

- 625-2.1 [RFP] Pilothouse windows shall be arranged to provide for the maximum practicable visibility for navigation and boat operation.
- 625-2.2 [RFP] Forward pilothouse windows shall be fixed.
- 625-2.3 [RFP] A minimum of one window on each side of the pilothouse shall be openable with a minimum clear opening of 508mm (20 in), providing visual access to the sides of the vessel for maneuvering.
- 625-2.4 [RFP] All fixed pilothouse windows shall be electrically heated, with the exception of the sliding windows and fixed portion adjacent immediately to the sliding windows. Pilothouse door windows shall not be heated.
- 625-2.5 [RFP] Windshield wipers meeting the requirements of COR Section 625-5 shall be installed on all windows in the pilothouse front, including any which may be at an angle of less than 90° to the front.
- 625-2.6 [RFP] The cutter's design shall include a permanent means for one person to easily and conveniently clean the exterior pilothouse windows while the cutter is underway.

625-3 [RFP] Portlights in Doors

- 625-3.1 [RFP] A fixed portlight shall be installed in all doors leading to the weatherdeck except for any doors that provide access only to lockers. A fixed portlight shall also be installed in any doors leading to the mess deck. All exterior portlights shall have a clear opening of at least 100mm (3.94 in) diameter. If provided, an aft facing Pilothouse door shall be fitted with two fixed unheated windows for increased visibility aft during Cutter Boat launch and recovery operations.
- 625-3.2 [RFP] Portlight installations shall maintain the same strength and tightness requirements as the door.

625-4 [RFP] Heated Windows

- 625-4.1 [RFP] Heated windows shall be of electrically heated glass with a minimum heating capacity of 750 watts/m². The windows shall include sinusoidal formed fine electrically resistive wires embedded in a vinyl inner layer between two sheets of heat treated (after cutting) glass. Each layer of glass shall have a

minimum thickness of 6mm (0.24 in). If recommended by the window manufacturer, a controller for each unit shall be located near the window. The control shall be provided by a temperature sensitive resistive element that is laminated within the vinyl inner layers of the glass or by a temperature sensitive surface mounted resistive element (sensor).

- 625-4.2 [RFP] All heated (non-icing) windows for control stations and pilot house shall comply with [MIL-W-18445](#).

625-5 [RFP] Window Wipers

- 625-5.1 [RFP] Window wipers shall be of the heavy duty marine type, and shall be selected to sweep a minimum of 65% of the clear area of the window to which they are mounted. Pneumatic or vacuum systems are not allowed.
- 625-5.2 [RFP] The wipers shall effectively clear the glass and maintain good vision in the light, moderate, and heavy rain conditions that are defined in the U. S. Weather Service "[Federal Meteorological Handbook #1](#) - Surface Observations".
- 625-5.3 [RFP] Wiper speeds shall be adjustable from 0 to a minimum of 100 strokes per minute, a stroke being a swing in one direction to clear the window.
- 625-5.4 [RFP] The operating mechanism and control equipment shall be inside the pilothouse. The control equipment for each wiper shall be located on or near the wiper it controls, within easy reach of the operator.
- 625-5.5 [RFP] All parts of the wiper assembly exposed to the weather, other than the blade, shall be of CRES 316L.
- 625-5.6 [RFP] Wiper blade pressure shall be adjustable with a minimum force of 5 N (1.12 lbf).
- 625-5.7 [RFP] The wiper system shall be provided with a method for preventing the stoppage of the wipers due to the accumulation of ice, such as an electric heater strip.
- 625-5.8 [RFP] The parking of the blade and arm as well as the location of the wiper motor shall be such as to allow maximum visibility through the window.
- 625-5.9 [RFP] The wiper system shall be capable of operating for 500 continuous hours in a salt spray environment, under the environmental conditions specified in COR [SECTION 070](#), without servicing or replacement of parts, except the rubber blade, which shall be replaceable.

625-6 [RFP] Window Washer System

- 625-6.1 [RFP] A window washer system for all windows with wipers shall be provided. The window wash system shall provide a spray of anti-freeze treated water to the windows in sufficient quantity and with a spray pattern that will remove a film of salt spray from the area covered by the wiper. The washer system controls shall be located adjacent to the window wiper controls. The window washer system shall have a minimum capacity of 20 liters (5.28 gal (US)). The washer fluid tank shall be located for ease of access for filling and maintenance.

625-7 [RFP] Blackout Covers

- 625-7.1 [RFP] Each window and portlight other than those in the pilot house shall be provided with a blackout cover. The covers shall be internally mounted, and shall effectively block out 100% of interior light when viewed from outside the vessel.

625-8 [RFP] Testing Requirements

- 625-8.1 [RFP] Windows identical to the largest forward-facing pilothouse window, the largest aft facing pilothouse window, and a typical deckhouse portlight or window shall be tested to failure to ensure that that the pressure requirements have been satisfied.

SECTION 631. [RFP] PAINTING AND COATING**631-1 [RFP] General**

- 631-1.1 [RFP] Painting and preservation shall be performed in accordance with [COMDTINST M10360.3C](#). A painting and preservation schedule shall be prepared and submitted for approval. (CDRL 085-604) A Corrosion Prevention Plan described in [COMDTINST M10360.3C](#) shall be prepared and submitted for approval. (CDRL 085-604)
- 631-1.2 [RFP] For steel and aluminum weather decks, the non-skid coating system shall be applied in accordance with of [COMDTINST M10360.3C](#), Appendix A, for "Weather Deck Non-Skid, MIL-SPEC Coating System for Steel or Aluminum."
- 631-1.3 [RFP] If side shell exhaust outlets are provided, there shall be a teardrop style blackout on the hull at the main engine and generator exhaust outlets. The teardrop shall be painted in accordance with [COMDTINST M10360.3C](#), matte finish and black in color. The black color coat shall be heat resistant paint and can be applied over the existing, white, hull coating system and shall be compatible with the hull coating system.
- 631-1.4 [RFP] Qualifications.
- 631-1.4.1 [RFP] Personnel performing coating application work in critically coated areas, as defined by [COMDTINST M10360.3C](#), must be currently certified under the Society for Protective Coatings SSPC-QP 1 certification program. Details on this program are available at www.sspc.org/certification.
- 631-1.4.2 [RFP] All personnel operating pumps and applying coatings via plural component spray equipment are required to have completed the Society for Protective Coatings Marine Plural Component Applicator Certification program (SSPC-C 14). Details on this program are available at <http://www.sspc.org/certification/individualcertification.html>.

SECTION 633. [RFP] CATHODIC PROTECTION**633-1 [RFP] General**

- 633-1.1 [RFP] The interior and exterior cathodic protection systems shall be designed and installed in accordance with [NSTM Chapter 633](#), [ASTM B-418](#) and [ASTM F1182](#).
- 633-1.2 [RFP] [NSTM 633](#), Sections 4.4.2, 4.4.3, 4.4.5 shall be used to place the anodes composed of materials in accordance with [ASTM B-418](#) and also in accordance with [ASTM F1182](#). The potential is to be measured in accordance with [NACE Std RP0176](#), section 4, as a way to ensure that the system is providing adequate protection.

633-2 [RFP] Zinc Anodes

- 633-2.1 [RFP] Zinc anodes shall be installed as required to protect the hull and underwater machinery and appendages.
- 633-2.2 [RFP] Zinc anodes for machinery shall be installed as required by equipment manufacturers.
- 633-2.3 [RFP] Zinc anodes shall be installed in a manner to facilitate ease of replacement and not require special tools or training.

633-3 [RFP] Impressed Current Cathodic Protection System

- 633-3.1 [RFP] An Impressed Current Cathodic Protection system may be used as an alternative to zinc anodes. Controls shall be installed to prevent damage to the craft's structure or coating system due to improper current levels. The system shall operate from the craft's AC power system.

633-4 [RFP] Anodes

- 633-4.1 [RFP] A raw water piping cathodic protection system, such as the Cathelco copper anode protection, shall be installed to inhibit growth in the piping systems. The anode shall be compatible with the piping system.
- 633-4.1.1 [RFP] If provided, the system shall be designed to operate for at least one year before the anodes need to be replaced.

SECTION 634. [RFP] DECK COVERING**634-1 [RFP] General Requirements**

- 634-1.1 [RFP] Deck coverings that comply with the [IMO HSC Code](#) requirements for surface flammability, smoke, and toxicity shall be installed in all environmentally controlled compartments. Deck covering (except deck insulation) shall neither be installed under enclosed built-in furniture nor under equipment with enclosed foundations.
- 634-1.2 [RFP] Deck surfaces shall be cleaned, painted, tested and otherwise finished prior to installation of insulation. Before deck covering is applied, weld beads shall be ground flush, and the decks shall be faired with a minimum amount of the proper type of underlay material in accordance with [MIL-D-3135G](#) in way of laps, depressions and similar conditions, and to provide sloping decks in those compartments requiring drainage. Where deck coverings are adjacent to painted deck areas, protection shall be provided for free edges of deck coverings, including exposed edges next to joiner bulkheads.
- 634-1.3 [RFP] No water-based adhesives shall be used in conjunction with any deck covering.
- 634-1.4 [RFP] Salt based underlayment shall not be used.
- 634-1.5 [RFP] Installation of all deck coverings shall be accomplished in accordance with manufacturer's instructions.
- 634-1.6 [RFP] Durable adhesive type non skid shall be applied to the weather decks and tread areas. Non skid treads shall be 3M Safety Walk General Purpose treads or equivalent. The following are the features required of the treads:
- 634-1.6.1 [RFP] Shall be tested in accordance with [MIL-PRF-17951](#);
- 634-1.6.2 [RFP] Shall have abrasive particles bonded by tough, durable polymer to a dimensionally stable plastic film;
- 634-1.6.3 [RFP] Shall be coated with a pressure-sensitive adhesive cover by a removable protective layer on the reverse side;
- 634-1.6.4 [RFP] Shall have a minimum Dynamic Coefficient of Friction of a rubber surface against the treads of:
- 1.24, in dry conditions,
 - 1.20, in wet conditions, and
 - 0.80, with oil covering;
- 634-1.6.5 [RFP] Shall have a minimum Static Coefficient of Friction of a rubber surface against the treads of:
- 1.32, in dry conditions,
 - 1.29, in wet conditions, and
 - 0.98, with oil covering;
- 634-1.6.6 [RFP] Shall be (at minimum) resistant to water, bleach, 1% hydrochloric acid, 1% sodium hydroxide, detergent, soap, alcohol, motor oil, hydraulic fluid,

peanut oil, methyl ethyl ketone, 25% sulfuric acid, 50% antifreeze, windshield washer fluid, and diesel fuel; and shall be black in color.

634-1.6.7 [RFP] There shall be a 50.8mm (2 in) spacing between treads and all deck fittings, pads, interferences, deckhouse structures and deck edges. Treads shall be cut to the maximum size that will allow renewal to be accomplished by one person without creating air pockets, folds, or misalignment. Preparation of deck surfaces shall be in accordance with [COMDTINST M10360.3C](#). Treads shall be edge sealed as per manufacturer's recommendations. Installation of treads shall be in accordance with the manufacturers instructions, including a solvent wipe to de-grease the surface where the treads will be applied.

634-1.7 [RFP] All deck coverings shall be thoroughly cleaned and waxed or otherwise sealed after installation and immediately prior to delivery unless not recommended by the manufacturer of the product.

634-2 [RFP] Rubber Matting

634-2.1 [RFP] Rubber matting shall be provided in all areas of electrical hazards to prevent electrical shock to personnel. The rubber matting shall be fire retardant and have non-skid and high electric properties, in accordance with [MIL-DTL-15562G](#). No seams shall be within 1m of electrical or electronic equipment or panels.

634-2.2 [RFP] The decks shall be prepared, and the electrical grade sheet deck covering and matting installed, in accordance with [NSTM Chapter 634](#).

634-2.3 [RFP] Anti-fatigue matting shall be installed on the entire pilothouse deck over the deck covering. The mat shall conform to [MIL-M-910F \(SHIPS\)](#).

634-3 [RFP] Carpet

634-3.1 [RFP] Carpet shall be installed in berthing compartments only and shall conform to the fire performance requirements of [MIL-STD-1623](#) and the [IMO HSC Code](#). The weave, color, and pattern shall be coordinated with decor of the compartment and shall be approved by the Contracting Officer.

634-3.2 [RFP] Underlayment beneath carpet shall be [MIL-PRF-3135](#) Type II. The carpet may be cemented to the underlayment with an adhesive conforming to [MIL-A-21016](#).

634-3.3 [RFP] Exposed carpet edges shall be secured and covered with a decorative metal binding bar.

634-4 [RFP] Interior Deck

634-4.1 [RFP] The messroom, passageways, galley area, and sanitary compartments shall be covered with cosmetic interior polymeric deck covering [MIL-PRF-24613\(2\)](#) NOT 1, Type I or Type III (epoxy). [MIL-PRF-24613](#), Type II or Type III (polyurethane) coverings are prohibited. Deck covering shall be sloped toward deck drains and deck plate irregularities shall be corrected by use of underlayment [MIL-D-3135](#) Type 1, class 2. Care shall be taken not to use excessive underlayment. Deck covering shall be finished off at the bulkheads with at least a 60 mm cove molding.

634-5 [RFP] Weatherdeck and Ladders

- 634-5.1 [RFP] Safety treads of fabric, coated with silicon carbide particles and having a pressure-sensitive backing, shall be furnished and installed at the top and bottom of all inclined and vertical ladders, and on both sides of doors or arches having a coaming and used for continuous traffic. Installation shall be in accordance with [COMDTINST M10360.3C](#) and [COMDTINST M9000.6E](#).

SECTION 635. [RFP] THERMAL INSULATION AND ACOUSTICAL TREATMENT OF COMPARTMENTS**635-1 [RFP] General**

- 635-1.1 [RFP] Thermal insulating material shall be installed as required to meet the heating, ventilation, and air conditioning requirements of COR [Section 512](#) and as required to eliminate sweating. Passages used for recirculation and within air conditioned compartments shall be treated as air conditioned compartments. Acoustical treatment shall be installed as necessary to meet the requirements of COR [SECTIONS 070](#) and [073](#). All thermal and acoustic insulations shall be either non-combustible or fire restricting material in accordance with the [IMO HSC Code](#).
- 635-1.2 [RFP] Boundaries abutting insulated boundaries where insulation is not otherwise required shall be insulated for a distance of 600mm (23.6 in) from such insulated boundaries.
- 635-1.3 [RFP] Thermal and acoustic insulation shall be Fibrous cloth-faced board, [MIL-I-742F](#), Type I, or fibrous glass felt, [MIL-I-22023D](#), Type I (type II - 50 mm minimum for acoustic insulation), Class 4 or faced polyimide foam board, [DOD-I-24688](#) Type II Class 1 or Class 2 as required for thermal or acoustic performance.
- 635-1.4 [RFP] Surfaces shall be cleaned, painted, tested and otherwise finished prior to installation of insulation. Surface preparation shall be completed in accordance with [COMDTINST M10360.3C](#). Surfaces shall exhibit low flame spread characteristics in accordance with the [IMO HSC Code](#).
- 635-1.5 [RFP] Vapor barriers shall be applied to all insulation as necessary to prevent penetration of moisture.
- 635-1.6 [RFP] Insulation panels in way of equipment or compartments requiring servicing, maintenance or inspection shall be secured with mechanical fasteners to facilitate removal and replacement.
- 635-1.7 [RFP] Structural Fire Protection shall be installed in accordance with the requirements of [IMO HSC Code](#), Chapter 7. Fire insulation shall comply with cargo vessel rules without regard to the 500 GT requirements. Subdivision bulkhead(s) between machinery rooms shall meet the requirements for both sides of the bulkhead.

SECTION 637. [RFP] SHEATHING**637-1 [RFP] General**

- 637-1.1 [A009] Sheathing shall be provided to cover and protect insulation as described by Sections 637-1.2 through 637-1.7 and in spaces where normal operations could cause damage to insulation. Sheathing shall be perforated aluminum, aluminum sheet or non-perforated CRES. Insulation shall be face painted, in accordance with [COMDTINST M10360.3C](#), wherever sheathing is not provided.
- 637-1.2 [RFP] Sheathing materials shall be selected in accordance with COR [Section 078](#). Sheathing shall be a product currently in use as a marine sheathing material in Navy or Coast Guard vessels, or vessels subject to the [IMO HSC Code](#).
- 637-1.2.1 [RFP] Decorative sheathing is required for covering insulation in all living compartments except insulation behind joiner work or otherwise neither visible nor capable of being contacted by personnel under normal conditions.
- 637-1.2.2 [RFP] Non-perforated CRES sheathing is required in the heads, other wet spaces and the galley. Water intrusion ("wicking") into insulation shall be prevented.
- 637-1.2.3 [RFP] Perforated aluminum sheathing is required in the machinery compartments.
- 637-1.3 [RFP] The edges of aluminum sheathing shall be finished by aluminum trim that provides a smooth edge completely covering the cut edges of the sheathing. CRES sheathing shall be trimmed similarly with CRES.
- 637-1.4 [RFP] Sheathing in way of equipment or compartments requiring servicing, maintenance or inspection shall be secured with mechanical fasteners to facilitate removal and replacement.
- 637-1.5 [RFP] All bulkheads in galley, scullery, pantries and others, as necessary for sanitation, are to be sheathed in CRES AISI Type 302, 304 or 316. CRES sheathing shall be USSG 18 where connected to structure by metal furring strips and USSG 22 where applied directly to the structure.
- 637-1.6 [RFP] CRES overhead sheathing shall be applied in galley, scullery, medical treatment room, pantries and other spaces as necessary for sanitation.
- 637-1.7 [RFP] Aluminum sheathing (vertically) shall be installed behind vertical ladders on bulkheads.

SECTION 640. [RFP] GENERAL REQUIREMENTS FOR LIVING COMPARTMENTS**640-1 [RFP] General Requirements**

- 640-1.1 [RFP] Arrangements shall be designed for comfort and convenience of the crew and shall be designed in accordance with the habitability requirements of COR [SECTION 070](#) and the human engineering requirements of [COR Section 088](#).
- 640-1.2 [RFP] Interior finish materials and furnishings shall be selected in accordance with COR [Section 078](#).
- 640-1.3 [RFP] Furniture;
- 640-1.3.1 [RFP] All furniture shall be sized to permit passage through installed doors and may be sectionalized to meet this requirement.
- 640-1.3.2 [RFP] Securing mechanisms shall be installed or provided for all furniture to withstand the FRC-B's motions as described in COR [SECTION 070](#).
- 640-1.3.3 [RFP] Portable furniture shall be equipped with glides to prevent damage to deck covering.
- 640-1.3.4 [RFP] The bases of fixed furniture shall be adapted to follow the contour of the deck and shall provide level seating and table surfaces at even keel.
- 640-1.3.5 [RFP] Metal furniture shall be of welded construction with spot welds spaced close enough to prevent surface waviness of sheets and with flush welds ground smooth and shall be fabricated to eliminate racking.
- 640-1.3.6 [RFP] Drawers shall have slides or glides and stops to prevent drawers from tipping when pulled out and from sliding out all the way. Recessed type handles shall be provided for drawers in berths and desks. Drawers shall have positive locking latches.

640-2 [RFP] Berthing Arrangements

- 640-2.1 [RFP] The FRC-B shall have berths arranged to meet the requirements of COR [SECTION 070](#).
- 640-2.2 [RFP] Berthing compartments shall be located and arranged within the vessel to discourage through traffic. Berthing compartments shall not be located where their main access is from the weather deck or from a machinery compartment.
- 640-2.3 [RFP] Berthing shall be arranged to provide segregated berthing compartments for any male/female crew mix. There shall not be more than 4 berths in any one berthing compartment. Berthing shall be no greater than two high.

640-3 [RFP] Berthing Compartments

- 640-3.1 [RFP] Each berthing compartment shall be provided with the following:
- 640-3.1.1 [RFP] Wastebasket.
- 640-3.1.2 [RFP] Book Rack (minimum 300mm (11.8 in) per person per compartment).
- 640-3.1.3 [RFP] Small Wash Basin (Sink) with hot and cold potable water.
- 640-3.1.4 [RFP] Glass Mirror with metal frame.
- 640-3.1.5 [RFP] Soap Dish.
- 640-3.1.6 [RFP] Towel Bar.

- 640-3.2 [RFP] Each of the berths shall be provided with the following:
- 640-3.2.1 [RFP] Berth. "Northhampton style" berths shall be furnished with a mechanism to hold them open while accessing the storage part of the berth.
 - 640-3.2.2 [RFP] Berth light with 110V outlet.
 - 640-3.2.3 [RFP] Privacy curtain (in compartments with more than one berth).
 - 640-3.2.4 [RFP] Lockable storage for clothes, toiletries and personnel effects. The lockable storage unit must be able to accommodate hanging the standard USCG Service Dress Blue uniform on a hangar.
 - 640-3.2.5 [RFP] Clothes hooks - 2 ea. (apart from those in any lockers).
 - 640-3.2.6 [RFP] Access doors shall be provided under all racks for light storage. The space below the racks shall be closed to prevent items from entering the bilges.
- 640-3.3 [RFP] For each CO, XO and CPO stateroom, a desk with a chair shall be provided.

640-4 [RFP] Work Station

- 640-4.1 [RFP] One work station shall be provided in an environmentally controlled compartment other than the pilothouse, berthing compartments, and sanitary compartments.
- 640-4.2 [RFP] The work station shall consist of the following:
- 640-4.2.1 [RFP] Desk (minimum 900mm x 600mm (35 in x 23.6 in) desk top).
 - 640-4.2.2 [RFP] Chair.
 - 640-4.2.3 [RFP] Desk lamp.
 - 640-4.2.4 [RFP] File Cabinet (2 drawer minimum)

SECTION 644. [RFP] SANITARY COMPARTMENTS AND FIXTURES**644-1 [RFP] General**

- 644-1.1 [RFP] For maximum flexibility in mixed gender crewing of vessels, each stateroom and berthing space shall be provided with a dedicated sanitary facility, to the maximum extent practicable. The sanitary facility should be directly accessible from within the living space, where practicable, and on the same deck as the living space. Maximum number of persons per fixture is 6.
- 644-1.2 [RFP] Sanitary compartments arrangement shall be designed for the comfort and convenience of the crew. The size and location of the sanitary compartments shall be determined based upon the following:
- 644-1.2.1 [RFP] The number of berthing compartments.
- 644-1.2.2 [RFP] The requirement to accommodate any mix of male/female crew members.
- 644-1.3 [RFP] Crew sanitary compartments shall be adjacent to and accessible from the berthing compartments. Dedicated sanitary compartments, i.e. accessible only from the berthing compartment which they serve, are allowed. Designs requiring personnel to transit from a berthing compartment to the shower via commissary compartments, operational compartments, workshops, or the weather deck are not allowed.
- 644-1.4 [RFP] Fixtures (toilets, shower stalls, wash basins) need not be located within the same compartment, and the total number of shower stalls does not necessarily have to equal the number of toilets. As a minimum, a wash basin and a magazine rack shall be co-located with each toilet.
- 644-1.5 [RFP] Wherever a shower stall is installed, a towel bar, grab rod, and soap dish shall be installed. Wherever a toilet is installed, a toilet paper dispenser shall be installed. Wherever a wash basin is installed, a paper towel dispenser, soap dish, towel bar, mirror and two clothes hooks shall be installed.
- 644-1.6 [RFP] Fixtures shall be mounted with compression washers or shock mounts.
- 644-1.7 [RFP] Water faucets shall be watersaving type. Shut-off valves shall be provided in the supply lines and shall be of the globe type.
- 644-1.8 [RFP] Balanced pressure shower valves shall be installed in the shower stall. Shower heads shall be the watersaving type with an integral shutoff valve.
- 644-1.9 [RFP] FRC-B structure surrounding shower enclosures shall be treated as a closed-in space for painting and preservation purposes in accordance with [COMDTINST M10360.3C](#).

644-2 [RFP] Emergency Eye/Face Wash Stations

- 644-2.1 [RFP] Emergency eye/face wash stations, complying with [ANSI Z358.1](#), shall be provided and installed in machinery spaces (e.g. containing batteries) containing any hazmat and hazmat storage area. Supply for this service shall be taken from a potable water supply line at reduced pressure to meet the flow rates and pressures specified in [ANSI Z358.1](#).
- 644-2.2 [RFP] The root valve for each eye/face wash station shall be locked open.

- 644-2.3 [RFP] All eye/face wash stations located in remote machinery spaces shall be provided with a remote audible and visual alarm actuated by the wash facility operating device in accordance with COR Section [436](#).
- 644-2.4 [RFP] Triage station (Mess Deck) shall have an eye wash station

SECTION 651. [RFP] COMMISSARY COMPARTMENTS**651-1 [RFP] General**

- 651-1.1 [RFP] Commissary compartments arrangement (consisting of galley, messdeck, and food storage area) shall be designed for the comfort and convenience of the crew. Arrangement of the compartment shall provide for the efficient preparation, serving, consumption, and cleanup of traditional meals. The preparation of "traditional" meals should include a combination of dry stores, refrigerated items, and frozen items. Prepackaged, frozen, or dehydrated meals are not considered "traditional". Provisions shall be provided for stowage and preparation of meals for Alien Migrants to support AMIO, see COR [SECTION 070](#).
- 651-1.2 [RFP] In designing the size, arrangement, and location of the commissary compartments, the primary use of these compartments should be considered the preparation, serving, consumption, and cleanup of meals. The arrangement, choice of equipment and furnishings should not be constrained by previously used methods. Crew messing during underway operations, particularly in heavy weather, should be optimized.
- 651-1.2.1 [RFP] A full scale mockup of the galley and mess areas shall be constructed to enable both contractor and government personnel to provide input to the design for maximizing the use of the spaces in accordance with COR [Section 098](#).
- 651-1.3 [RFP] Adequate food storage areas consisting of 18.4L (0.65 ft³)/day/permanent berthing for dry stores shall be provided in or immediately adjacent to the galley. All food storage areas shall be sized to meet the FRC-B endurance requirements of COR [Section 070-2](#).
- 651-1.3.1 [RFP] The internal gross volume of chill storage shall be not less than 8.5L (0.3 ft³). per berthing accommodation per day between replenishments.
- 651-1.3.2 [RFP] The gross internal volume of freeze storage shall be not less than 8.5L (0.3 ft³). per berthing accommodation per day between replenishments.
- 651-1.3.3 [RFP] Dry stores, chill stores, and freeze stores shall be stacked no higher than 1.8m (6.0ft).
- 651-1.4 [RFP] The mess deck will seat at least 16 crew members (and up to 22 total personnel) and shall be arranged so that it can be used as a lounge, administrative work area, and as a learning center with connections for the shipboard LAN and on-board computer based training system.
- 651-1.4.1 [RFP] This seating shall be of bench type with accessible storage space underneath. This storage space shall not be counted toward meeting the dry stowage volume requirements.
- 651-1.4.2 [RFP] The installed tables shall be fabricated in a manner that will allow them to fold-down for storage. This shall allow access to the full length storage under the bench seating and access to the deck area underneath the table.
- 651-1.5 [RFP] Equipment and facilities shall be suitable for marine use, of commercial quality, and meet the requirements of the Food Service Sanitation Manual, [COMDTINST M6240.4A](#). The microwave, trash compactor, and ice machine are not required to be NSF certified.

- 651-1.6 [RFP] There shall be no crevices or inaccessible voids which might harbor vermin, cooking waste or foreign matter. Construction shall be free of sharp inside corners to facilitate cleaning. Access for cleaning, painting, and treating with insecticide shall be provided.
- 651-1.7 [RFP] Materials used for equipment required by this section shall resist stain and corrosion and shall not affect the taste of the food. Where CRES is specified, it shall conform to [ASTM A959-04](#) Standard Guide for Specifying Harmonized Standard Grade Compositions for Wrought Stainless Steels Type 304, finish 4 for exposed surfaces and finish 2b for surfaces other than exposed. Where aluminum alloys are specified in this section they shall conform to [ASTM-B-221-06](#) or [QQ-A-200/5D](#), Temper H-111 for shapes and [ASTM-B-209](#) or [QQ-a-250/8](#), Temper H-32 for sheet.
- 651-1.8 [A010] Doors and drawers, including refrigerator, freezer and oven doors, shall have positive latching locks to prevent them from opening due to motions described in COR [SECTION 070](#).
- 651-1.8.1 [A010] The refrigerator arrangement shall be primarily accessible from the galley.
- 651-1.9 [RFP] Range/oven, coffee maker, and refrigerator shall be fitted with sea rails.
- 651-1.10 [RFP] Heat producing equipment shall be installed with clearances as directed by the equipment manufacturer.
- 651-1.11 [RFP] Outside edges of counters shall be constructed to provide a raised coaming of at least 22mm (0.87 in) high. Where the counter meets a bulkhead (forming an abutment), the top shall be extended up on the bulkhead to form a splashboard at least 200mm (7.87 in) high. The dresser shall slope slightly toward the sinks.
- 651-1.12 [RFP] Provisions shall be made above cooking equipment, food serving equipment, and food preparation surfaces to prevent condensate or other foreign matter from dropping into or on this equipment. Piping, wireways, vents, and other interferences from which contaminants could fall shall not be installed over this equipment.
- 651-1.13 [RFP] The galley deck shall be fitted with a drain(s) for water removal. The drain(s) shall be easily accessible for cleaning.

651-2 [RFP] Galley and Messdeck

- 651-2.1 [RFP] Equipment shall be sized to meet the endurance requirements and shall consider human engineering factors. As a minimum, the following equipment shall be provided and installed:
- 651-2.1.1 [RFP] Galley:
- 651-2.1.1.1 [RFP] Commercial grade, convection/microwave oven of at least 0.028m³ (1.0 ft³).
- 651-2.1.1.2 [A014] Range/oven/griddle/ filterless (i.e., centrifugal airstream action deposits grease in traps) auto cleaning grease interceptor and exhaust hood with built-in fire suppression system.
- 651-2.1.1.3 [RFP] Refrigerator
- 651-2.1.1.4 [RFP] Freezer

- 651-2.1.1.5 [RFP] Sink, triple with faucet
- 651-2.1.1.6 [RFP] Towel bars
- 651-2.1.1.7 [RFP] Four slice automatic toaster
- 651-2.1.1.8 [RFP] Dishwasher/sanitizer, with installed soap and chemical injection dispenser system
- 651-2.1.1.9 [RFP] Paper towel dispenser (bulkhead mounted)
- 651-2.1.1.10 [RFP] Coffee maker (2 pot) w/potable water connection.
- 651-2.1.1.11 [RFP] Trash compactor
- 651-2.1.1.12 [RFP] Ice machine
- 651-2.1.1.13 [RFP] Soap dispenser, liquid
- 651-2.1.1.14 [RFP] Spray rinse unit @ 24" x 24" x 12" sink
- 651-2.1.2 [RFP] Mess
 - 651-2.1.2.1 [RFP] Commercial grade, convection/microwave oven of at least 0.028m³ (1.0 ft³).
 - 651-2.1.2.2 [A009] To achieve an optimal arrangement, any of the following galley equipment can be located in the messdeck: four slice automatic toaster, coffee maker (2 pot) w/potable water connection, and ice machine.
- 651-2.2 [RFP] A bulletin board with frame shall be provided in the messdeck. It shall be at least 600mm (23.62 in) high by 900mm (35.43 in) wide.
- 651-2.3 [RFP] The entertainment system shall be installed in the messdeck. The system shall be arranged for easy access and viewing, and for listening enjoyment. Storage for CDs and DVDs shall be provided (see COR Section 434).
- 651-2.4 [RFP] Stowage shall be provided for food preparation and food serving equipment. Separate stowage shall be provided for cleaning gear. Upper and lower stowage cabinet segregation shall be provided.
- 651-2.5 [RFP] A "dry erase" board with frame shall be provided and installed in the messdeck. It shall be at least 600mm (23.62 in) high by 900mm (35.43 in) wide and fitted with both a tray and a rack, each to hold a dry eraser and dry erase markers (4).

SECTION 652. [RFP] MEDICAL EQUIPMENT**652-1 [RFP] General**

- 652-1.1 [A009] A secure, corrosion resistant medical cabinet shall be provided for stowage of medical supplies. The locker shall accommodate medical supplies listed in [COMDTINST M6700.7](#), which shall be furnished by the contractor. The locker shall allow stowage of supplies in such a way that all are readily accessible.
- 652-1.2 [RFP] A secure medical cabinet NSN 2090-00-368-4792 or equal in terms of capacity, security, corrosion resistance, and with lock shall be installed in the messroom for stowage of the medical supplies listed in [COMDTINST M6700.7](#), This locker shall be labeled in accordance with [NAVSEA S9AAO-AA-SPN-010/GEN-SPEC](#), Section 652.
- 652-1.3 [RFP] First aid boxes NSN 6545-00-116-1410, NSN 6545-01-521-8511, or equivalent in terms of weight, capacity, and dimensions shall be installed in the mess room, pilot house, and in each engine room and machinery compartment. A portable standard first aid kit NSN 6545-00-920-7125 shall be provided for each repair locker.
- 652-1.4 [RFP] The FRC-B shall have a triage station collocated with the mess deck. The station shall have installed high intensity lighting and medical oxygen in the immediate vicinity.
- 652-1.5 [RFP] A connection to the cutter's radio communication systems shall be installed to provide for transmission and reception of (unclassified or classified) radio communications with medical facilities either ashore or aboard other vessels to acquire expert medical advice and assistance

652-2 [RFP] First Aid Equipment

- 652-2.1 [RFP] A water tight first aid equipment locker shall be provided and provisioned with the following medical equipment where the equipment is secure, weather protected, out of ultra-violet rays, and with readily available access:

- 652-2.1.1 [RFP] U.S. Coast Guard EMS Kit (Life Saver Pack):

Item No.	QTY	Item Name	NSN or Part No.	Primary Source of Supply
1	1	USCG EMS Kit(Lifesaver Pack), empty (Red or Orange)	#USCG LIFESAVER 365RD-B(j)	R & B Fabrication (800)553-1911
2		Activated Charcoal Suspension(240ml)	6505-01-177-1960	
3	6	Adhesive Bandages	6510-00-913-7909	
4	6	Alcohol Prep Pads	6510-00-786-3736	
5	1	Aluminized Rescue Blanket	7210-00-935-6667	
6		Bag-Valve-Mask Resuscitator(collapsible bag)	BVM, Adult Complete #870001	Laerdal Medical (800)431-1055
7	1	BP Cuff Set	6519-01-039-4884	
8		Bulb Syringe, Infant	6530-00-110-1854	

Item No.	QTY	Item Name	NSN or Part No.	Primary Source of Supply
9		Burn Gel Dressing(4"x16")	6510-10-408-7546 Water-Jel Dressing 4"x16"	Water-Jel Tech (800)275-3433
10	10	EMS Report Forms	7530-01-GF2-9080 CG-5214 MEDEVAC report	
11	2	FROP Resuscitator with mask, 6' Hose	LSP #063-03R	Allied Health Products (800)444- 3940
12	6	Gauze, Petroleum Dressing(3"x18")	6510-00-202-0800	
13	6	Gauze, Sterile, 2's(4"x4")	6510-00-721-9808	
14	6	Gauze, Sterile, 2's(2"x2")		open purchase
15	4	Gauze, Sterile, Eye Patch		open purchase
16	3	Gloves		open purchase
17		Glucose Gel(15gm)	6505-01-243-2676	
18	1	Goggles/Safety Glasses	4240-01-292-2816	
19	1	Hand-powered Suction Unit	V-vac Suct #98-50- 00	Laerdal Medical (800)431-1055
20	2	Large Battle (Trauma) Dressing(11 3/4"x11 3/4")	6510-00-201-7425	
21	2	Medium Battle (Trauma) Dressing(7 1/2"x8")	6510-00-201-7430	
22	1	Nasal Cannula		open purchase
23	1	Nasopharyngeal Airway Kit		open purchase
24	2	Non Rebreather Mask	6515-00-819-7773	
25	1	O ₂ Connective Tubing		open purchase
26	1	Oropharyngeal Airway Kit	6515-01-317-1101	
27	1	Oxygen Cylinder, "Jumbo D", 650L	LSP #349-040	Allied Health Products (800)444-3940
28	1	Oxygen Regulator(2 DISS, 1 control flow ports)	LSP #270-020	Allied Health Products (800)444-3940
29	2	Pen, Ball Point, Black	7520-00-935-7135	
30	1	Penlight	6230-00-125-5528	
31		Plastic Bags, Zipperlock(12"x12")	8105-00-837-7757	
32	1	Resuscitation Mask with One-way Valve	6515-01-275-7345	
33	1	Rigid Cervical Collar(no-neck)	Stifneck #98-06-00 or equiv.	Laerdal Medical (800)431-1055
34	1	Rigid Cervical Collar(regular)	6515-01-371-4341	Laerdal Medical

Item No.	QTY	Item Name	NSN or Part No.	Primary Source of Supply
			Stifneck #98-06-00 or equiv.	(800)431-1055
35	1	Rigid Cervical Collar(short)	Stifneck #98-06-00 or equiv.	Laerdal Medical (800)431-1055
36	1	Rigid Cervical Collar(tall)	6515-01-316-1946 Stifneck #98-06-00 or equiv.	Laerdal Medical (800)431-1055
37	1	Rigid Cervical Collar(pedi)	Stifneck #98-06-00 or equiv.	Laerdal Medical (800)431-1055
38	1	Rigid Cervical Collar(infant)	Stifneck #98-06-00 or equiv.	Laerdal Medical (800)431-1055
39	2	Rigid Cervical Collar, Adjustable(4 sizes)	Ambu Perfit ACE #281 or equiv.	Ambu, Inc (800)262-8462
40	1	Scissors (trauma/utility)	6515-00-935-7138	
41	1	Semi-rigid Aluminum Splint	6515-01-225-4681 SAM Splint	Seaberg Co (800)818-4646
42	2	Small Battle (Trauma) Dressing(4"x7")	6510-00-159-4883	
43		Sterile Saline(250ml)		open purchase
44	1	Stethoscope, Dual Head	6515-00-374-2220	
45	1	Suction Tip, Fine	V-vac tip #98-50-04	Laerdal Medical (800)431-1055
46	2	Tape, Adhesive, Waterproof(2")	6510-00-926-8883	
47		Triage Tags		open purchase
48	4	Triangular Bandage(37"x52"x37")	6510-00-201-1755	
49		Umbilical Clamps	6515-00-890-1541	
50	1	USCG Personal Protective Equipment Kit	USCG PPE Pack #26592-s or equiv.	MedProtect, Inc (800)945-4158

- 652-2.1.2 [RFP] Pneumatic Anti-Shock Garment with the same characteristics as in [COMDTINST M10470.10F](#).
- 652-2.1.3 [RFP] Sager type Traction splint with the same characteristics as in [COMDTINST M10470.10F](#).
- 652-2.1.4 [RFP] Full-Body Litter/Splint (Miller Body Board) with the same characteristics as in [COMDTINST M10470.10F](#).
- 652-2.1.5 [RFP] Half Back Extrication with vertical Lift strap assembly. (Used with Miller Body Board) with the same characteristics as in [COMDTINST M10470.10F](#).
- 652-2.1.6 [RFP] (2) Human Disposal Body Bags with handles that will able to lift at least 1.557kN (350 lbs).
- 652-2.1.7 [RFP] Manual Resuscitator with Clear Bag Valve Mask and oxygen reservoir.

- 652-2.2 [RFP] A folding Stokes Litter shall be provided. The folding Stokes Litter shall have flotation consisting of a chest pad, flotation tubes, restraint straps, and a ballast bar with the same characteristics as given in [COMDTINST M10470.10F](#). Secure stowage for the folding Stokes Litter shall be provided where access can be obtained on the weatherdeck.

SECTION 661. [RFP] CLOCKS AND BAROMETER**661-1 [RFP] General Requirements**

- 661-1.1 [RFP] Clocks which keep accurate, reliable time shall be provided in all berthing compartments, the pilot house, messdeck, and engine room. Clocks shall be operated from an internal battery or shall be of the wind up type. All clocks shall have fast/slow correction mechanisms, and shall be constructed to resist the corrosive effects of the marine environment.
- 661-1.2 [RFP] The pilothouse clock shall have an integral bell which sounds the ship bell code and can be silenced.
- 661-1.3 [RFP] A barometer shall be provided and installed inside the pilothouse. The barometer shall be of the same diameter, style, and quality as the pilothouse clock.

SECTION 663. [RFP] PILOTHOUSE FURNISHINGS**663-1 [RFP] General Requirements**

- 663-1.1 [RFP] In addition to the equipment and furnishings required by other COR Sections, the furnishings shown in Table 663-1 shall be provided in the pilothouse.

Table 663-1 – Additional Pilothouse Furnishings

QTY	ITEM
1	Bookrack, for vertical stowage of 230mm (9 in) x 330mm (13 in) books
4	Cup holders, large
4	Binocular holder
1	Status Board
1	Stadimeter Stowage
1	Abandon Ship Navigation Kit Stowage (briefcase)
1	Bulletin Board, located near Chart Table
1	Dry erase board, located near Chart Table
1	Chart Table Light, swivel, with white and blue lights and dimmer controls
4 sets	Flash gear ((Hood NSN 8415-01-268-3473) and Gloves (NSN 8415-01-267-9661), stowage for;
4	Navy Standard Inflatable Yoke-Type PFD's

- 663-1.2 [RFP] The status board listed above shall include: plan views of general arrangements for each deck and tankage; one grid for listing equipment nomenclature, status, discrepancy and time to repair for six pieces of equipment; one grid for listing name, call sign and location of six surface contacts; and one section listing weather, tides and currents.
- 663-1.3 [RFP] Exterior stowage for 1 set of International signal flags shall be provided convenient to the signal halyards.
- 663-1.4 [A009] The wet bulb/dry bulb hygrometer and storage box, specified in the Outfit List, Section J, [Attachment 9](#), shall be installed on the aft exterior of the pilothouse or main deck superstructure. The box shall be located so that it remains out of direct sunlight.

663-2 [RFP] Pilothouse Arrangements

- 663-2.1 [RFP] The pilothouse shall be designed to accommodate at least four crewmembers according to the requirements of [ASTM F1166](#).
- 663-2.2 [RFP] The pilothouse shall have a forward control station. The control station shall be on the centerline, situated so that the operator is facing forward, and shall be outfitted with all controls and monitoring equipment necessary for operating the FRC-B as required by the COR. The pilothouse shall be outfitted and furnished in accordance with the requirements of this Section and the other Sections of this COR.

- 663-2.3 [RFP] The pilothouse shall be fitted with a navigation station with all necessary equipment for the navigation of the FRC-B.
- 663-2.4 [RFP] The pilothouse shall be arranged to provide maximum (360°) all around visibility. In addition to forward visibility, particular attention shall be paid to ensure visibility of Cutter Boat launch and recovery, to the sides of the FRC-B for alongside operations, forward for anchor handling operations, and aft for towing operations.
- 663-2.5 [RFP] The pilothouse shall be fitted with a pedestal mounted helm seat aft of the steering station on the FRC-B control station. The pilothouse shall also be fitted with seating for the Commanding Officer. Both helm seats shall be high-back pedestal chairs with folding foot rests and arm rests (Stidd Model 500-100 or equal) which swivel 360° with the ability to lock at least every 45° and shall have a height and fore / aft adjustment of at least 203mm (8 in). All metal surfaces and hardware shall be powder coated. The helm chair seat shall be at a height of at least 660mm (26 in) and shall be installed to provide an unobstructed passage between the chair and the console. The Commanding Officer's chair seat shall be at a height of at least 812 (32 in) and shall be located on the port side in close proximity to the navigation chart table and aft of the control console.
- 663-2.6 [RFP] Adequate clearance shall be provided to allow passage aft of the helm position without disturbing the helmsman.
- 663-2.7 [RFP] Space shall be reserved for installation of the CG Standard Workstation III (Display, Keyboard, CPU). A 120 VAC power supply shall be provided for this system.

663-3 [RFP] Navigation Station

- 663-3.1 [RFP] The navigation station shall be located in the aft portion of the pilothouse. The navigation station shall consist of a chart table and storage for navigation equipment and charts.
- 663-3.2 [RFP] The chart table shall be sized for use of the full size charts. The height of the chart table shall be convenient for work while standing. The minimum clear area shall be no less than 920mm (36.22 in) x 920mm (36.22 in). The chart table shall have one full width drawer, a hinged door for access on the right side of the console, a 5 sided box mounted on the left side for instrument storage, and a piano hinged lexan cover on the top.
- 663-3.3 [RFP] The following equipment shall be located adjacent to the chart table within easy access of the navigator:
- 663-3.3.1 [RFP] GPS and DGPS display and controls.
 - 663-3.3.2 [RFP] Loran-C.
 - 663-3.3.3 [RFP] Speed log.
 - 663-3.3.4 [RFP] Clock and barometer.
 - 663-3.3.5 [RFP] Gyrocompass remote display.
 - 663-3.3.6 [RFP] Chart table light, with night lens capability
 - 663-3.3.7 [RFP] Stowage for folded charts (stowage drawers to have minimum clear stowage area of 700mm (27.56 in) x 920mm (36.22 in)).
 - 663-3.3.8 [RFP] Stowage for navigation tools.

663-4 [RFP] Radar Station

663-4.1 [RFP] A bench seat or bolster shall be provided at the radar operator station.

663-5 [RFP] Weapons Station(s)

663-5.1 [RFP] The pilothouse shall have a weapon operator's station for each remote operated weapon system installed as required in COR [Section 700](#).

663-5.2 [RFP] A bench seat or bolster shall be provided at the weapons station(s).

SECTION 664. [RFP] DAMAGE CONTROL**664-1 [RFP] General**

- 664-1.1 [RFP] Damage control equipment requirements are found in Cutter Standard Repair Locker Inventory for FRC-B in Section J, Attachments. The Contractor shall provide the equipment and shall provide storage for this equipment on or above the damage control deck. All equipment shall be stored in designated lockers. Lockers exposed to the weather shall be watertight.
- 664-1.2 [RFP] The Damage Control Locker shall be accessible from the weather deck and located in the vicinity of a central egress location from the superstructure.

664-2 [RFP] Fire and Salvage Equipment

- 664-2.1 [RFP] Stowage compartment, mounting brackets, and stowage of associated equipment for the following portable fire and salvage equipment shall be provided:
- 664-2.1.1 [RFP] The two (2) CG P-6 pumps shall be stowed in their containers on the weather deck immediately accessible for emergency use.
- 664-2.1.2 [RFP] P-100 Fire Pumps
- 664-2.1.2.1 [A003] The first P-100 fire pump (designated herein "P-100 pump #1"). The pump shall be stowed for emergency use on the weather deck aft of the forward most deckhouse bulkhead in an easily removable rigid, weathertight, Contractor furnished cover which allows the pump suction and discharge hoses to be connected to the pump and respective FRC-B piping with the cover installed. The P-100 pump shall be stowed in a location enabling pump operation using the seachest standpipe, specified in COR Section [521-6.1](#) without moving the pump. The P-100 Operation Manual shall be consulted for proper location of suction and discharge hoses. The P-100 mount foundation shall be fitted with a drain hole and removable plug. A canvas cover as specified in COR Section 613-2 shall be provided for the P-100 pump enclosure to minimize salt water intrusion where the supply and discharge hoses pass through the enclosure.
- 664-2.1.2.2 [RFP] The second P-100 pump (designated herein "P-100 pump #2") shall be stowed for emergency use on the weather deck aft of the forward most deckhouse bulkhead in an easily removable rigid weathertight, Contractor furnished cover. The P-100 mount foundation shall be fitted with a drain hole and removable plug. A canvas cover as specified in COR Section 613-2 shall be provided for the P-100 pump enclosure to minimize salt water intrusion.
- 664-2.1.2.3 [RFP] Each P-100 Fire Pump includes the following equipment which requires to be stowed:
- 664-2.1.2.3.1 [RFP] Foot valve and strainer.
- 664-2.1.2.3.2 [RFP] Three 10 ft lengths of 3" suction hose.
- 664-2.1.2.3.3 [RFP] Exhaust hose.
- 664-2.1.2.3.4 [RFP] A 2-1/2" discharge fire hose.
- 664-2.1.3 [RFP] Self Contained Breathing Apparatus (SCBA).

664-3 [RFP] Damage Control Central

- 664-3.1 [RFP] Damage Control Central (DCC) shall be located in the pilothouse and shall be configured for maximum efficiency during emergency operations. Appropriate seating and writing surfaces shall be provided. Portable, bound, laminated drawings (279mm x 432mm (11" x 17") size) shall be provided for all DCC diagrams. Controls for shutdown of ventilation and operation of the firemain, magazine sprinkler system, washdown countermeasure system (if fitted), and fire extinguishing systems shall be provided.

664-4 [RFP] Control and Alarm Panels

- 664-4.1 [A010] Alarm panels shall be mounted in the pilothouse.
- 664-4.2 [RFP] Alarm Panels. – A remote portable alarm panel shall be provided. Connections to the alarm system shall be provided on the port and starboard sides for a quarterdeck station.
- 664-4.2.1 [RFP] Firefighting Control Panel. - A remote firefighting control panel shall be located in a protected area outside the main and auxiliary machinery spaces. This panel will allow for the operation and indication of the equipment shown in [Table 664-3](#).

664-5 [RFP] Emergency Escape Breathing Devices (EEBDs)

- 664-5.1 [A010] Provide and install EEBDs, Ocenco model M-20.2, NSN 4240-01-439-5937. EEBDs shall be provided in sufficient type and quantity to complement all storage containers as described in this section. Two Ocenco training EEBDs model M-20.2T, NSN 4240-01-459-0078 shall be provided at delivery stored as required in COR Section 664-5.4.
- 664-5.2 [RFP] EEBDs shall be provided with stowage containers. One stowage container shall be installed at a distance no greater than 914mm (3 ft) from the head of each berth for ship's accommodations.
- 664-5.3 [RFP] Additional stowage containers shall be mounted at a distance no less than 305mm (1 ft) and not greater than 1,524mm (5ft) above the deck in the following locations:
- 664-5.3.1.1 [RFP] Two in each main and auxiliary machinery space below the main deck.
- 664-5.3.1.2 [RFP] Two for the messdeck, if located below the main deck.
- 664-5.3.1.3 [RFP] Two in each workspace or lounge area located below the main deck.
- 664-5.3.1.4 [RFP] One in each passageway below the main deck at the base of the egress ladder(s).
- 664-5.4 [RFP] EEBD Training Unit Stowage.
- 664-5.4.1 [RFP] Two EEBD training units shall be installed.
- 664-5.4.2 [RFP] Lockers shall be installed near the messdeck.
- 664-5.4.3 [RFP] Each locker shall be securable with a hasp and staple.
- 664-5.4.4 [RFP] Each locker shall be painted yellow and labeled with plates complying with COR SECTION 602 in 25mm (1 in) red letters as follows:

WARNING

**FOR EEBD TRAINING ONLY EMERGENCY ESCAPE BREATHING DEVICE
TRAINING UNITS IN THIS LOCKER WILL NOT SUSTAIN LIFE**

**NOTICE
TRAINING UNITS SHALL BE LOCKED IN THIS LOCKER
WHEN NOT BEING USED FOR TRAINING**

664-6 [RFP] Shoring Storage

- 664-6.1 [RFP] Space shall be provided fore and aft on the ship for stowage of DC shoring. Shoring shall be protected from the weather and located readily accessible from the main deck. Stowage for shoring shall be provided aft of the collision bulkhead and forward of the after peak bulkhead. The shoring shall be readily accessible, without hindering normal passage of personnel.

Table 664-3: Equipment Operated from Fire Control Panel.

Shut Down	Start Up
Fuel Systems	
	Any Fire Pump
MMR/AMR Ventilation/HVAC	Supply/Exhaust
Bilge sprinkling systems (if installed)	Firefighting gaseous extinguishing agent
Main Engines	Bilge Sprinkling

Note: Start up of fire extinguishing systems shall include the necessary support system controls, such as start up of a fire pump, system alignment, and sending alarm signal to MCMS.

SECTION 665. [RFP] WORKSHOP COMPARTMENT**665-1 [RFP] General**

- 665-1.1 [RFP] A workbench shall be provided in a suitable location in the engine room or auxiliary machinery compartment. The workbench shall be electrically grounded and fitted with two drawers, one under the other, and locker underneath with doors. The top work area shall be at least 460mm (18.11 in) wide by 915mm (36 in) long and approximately 940mm (37 in) high. A 6" bench/pipe vise shall be provided and rigidly mounted on one of the two front corners of the workbench. The workbench shall be fastened securely to the craft's structure.
- 665-1.2 [RFP] The bench shall be capable of handling loads of at least 1.38 MPa (200 PSI) on the work top. The top shall be covered with a hard-board of dielectric non-sparking material, Lista International p/n MTOP-84BN (or equal).
- 665-1.3 [RFP] One deep sink with hot/cold faucet shall be located and installed next to the workbench.
- 665-1.4 [RFP] If a compressor is provided for other systems, it shall include a one-piece regulator/dryer and gauge set shall be provided at the workbench. The regulator shall allow the air pressure to be adjusted from 0 to 830 kPa (0 to 120.38 PSI). One gauge shall read supply air pressure to the regulator, while a second gauge shall read the output air pressure. The regulator shall have a female quick disconnect fitting installed as the output.
- 665-1.5 [RFP] Two heavy-duty tool chests with full-extension ball-bearing drawer slides and latching drawers shall be provided near the work bench. The drawers shall be key-lockable. The minimum dimensions of the chest are 914mm W x 533mm D x 1,067mm H (36"W x 21"D x 42"H).
- 665-1.6 [RFP] Two 110 VAC circuits shall be run to the workbench, and each shall terminate in a GFCI receptacle.

SECTION 671. [RFP] LOCKERS AND SPECIAL STOWAGES**671-1 [RFP] General Requirements**

- 671-1.1 [RFP] The FRC-B shall be designed with sufficient lockers and stowage for the Independent Operations duration specified in COR [Section 070-2](#).
- 671-1.2 [RFP] In addition to stowage arrangements specifically required elsewhere in this COR, stowage shall be provided for all portable articles required by this COR. Such stowage shall be made available in convenient locations in specially designed fittings or receptacles to suit the articles stowed, and to prevent movement of articles from stowed position in the environmental conditions specified in COR [SECTION 070](#). Stowage exposed to the weather shall be kept to a minimum.

671-2 [RFP] Gasoline Stowage

- 671-2.1 [RFP] Gasoline shall be stored in accordance with [COMDTINST M9000.6E](#), Chapter 540.
- 671-2.1.1 [RFP] On the FRC-B, the only gasoline storage shall be for the CG P-6 Pumps required in COR Section 664-2.1.1.
- 671-2.2 [RFP] A warning plate shall be installed in a conspicuous place in gasoline hazard areas. The inscription in red letters 25mm (1 in) high shall read:

WARNING

GASOLINE SHALL BE HANDLED WITH EXTREME CAUTION. PARTIALLY FILLED AND EMPTY GASOLINE CONTAINERS CONTAIN AN EXPLOSIVE MIXTURE OF GASOLINE VAPORS AND AIR. EMPTY OR PARTIALLY FILLED CONTAINERS SHALL BE DRAINED COMPLETELY OR REFILLED AS SOON AS POSSIBLE.

671-3 [RFP] Law Enforcement (LE) Gear Stowage

- 671-3.1 [RFP] A locker shall be provided, located on the interior of the FRC-B, to store all LE gear in close proximity to the primary weather deck access and/or the Small Arms Locker. The locker shall have adjustable shelving. One shelf must be large enough to allow the protective body armor to lay flat.
- 671-3.2 [RFP] The LE gear to be stowed in the locker includes:
- 671-3.2.1 [RFP] Eight of each of the following (one per person for eight people):
- 671-3.2.1.1 [RFP] Body armor.
 - 671-3.2.1.2 [RFP] Gun belts.
 - 671-3.2.1.3 [RFP] Coveralls.
 - 671-3.2.1.4 [RFP] USCG ball caps.
 - 671-3.2.1.5 [RFP] Tactical helmets.
 - 671-3.2.1.6 [RFP] Gloves.
 - 671-3.2.1.7 [RFP] Handcuffs.
 - 671-3.2.1.8 [RFP] Pepper spray.
 - 671-3.2.1.9 [RFP] Expandable batons.

671-3.2.1.10 [RFP] Flashlights.

671-3.2.1.11 [RFP] Personal radiation detectors.

671-3.2.2 [RFP] The locker shall also provide storage for:

671-3.2.2.1 [RFP] (3) Ballistic shields.

671-3.2.2.2 [RFP] (2) 5000 in³ boarding bags.

671-3.2.2.3 [RFP] One box of flex cuffs.

671-3.2.2.4 [RFP] (5) pairs of leg shackles.

671-3.2.2.5 [RFP] (2) narcotic identification kits.

671-3.2.2.6 [RFP] (1) box of evidence bags.

671-3.2.2.7 [RFP] (1) box of evidence tags.

671-3.3 [RFP] An additional 0.11m³ (4 ft³) of space shall be provided in the LE Gear locker for training items (non-guns, pads, etc.).

671-4 [RFP] Miscellaneous

671-4.1 [RFP] Two Class 6 GSA-Approved security one drawer filing cabinets shall be provided. They shall have a total stowage capacity of at least 0.0524m³ (1.85 ft³) and shall be equipped with a two-person security system capability.

671-4.2 [RFP] Internal stowage shall be provided for TYPE III life vests and immersion suits in accordance with [COMDTINST M10470.10F](#). Stowage shall be in a separate locker or lockers and shall be large enough to accommodate life vests and immersion suits for 120% of the accommodations. These lockers shall be located adjacent to escape routes. Additional stowage for 8 TYPE II life vests shall be provided convenient to the Cutter Boat.

671-4.3 [A010] On deck stowage for six 762mm (30") USCG approved life rings and battery operated float lights shall be installed in accordance with [COMDTINST M10470.10F](#). Equal numbers shall be located on the main deck and on the pilothouse deck, port, and starboard.

671-4.4 [RFP] A locker(s) for stowing all service manuals and special tools shall be provided. The locker shall be located convenient to the engineering compartments.

671-4.5 [RFP] A dedicated, vermin-proof, potable hose locker shall be installed within a sheltered area in the vicinity of the potable water filling connection. The rack shall hold two potable water hoses and be at least 460mm (18.11 in) above the deck, self-draining, easily cleaned, lockable, and corrosion resistant. A label plate inscribed as follows, in letters 25mm (1 in) high, shall be installed on the locker:

CAUTION

POTABLE WATER HOSE

STOWAGE ONLY

671-4.6 [A009] Stowage for one Category 1 Emergency Positioning Indicating Radio Beacon (EPIRB) shall be on the aft bulkhead of the superstructure and in its special bracket. This location shall be free of obstructions so the EPIRB will automatically float off and activate if the vessel sinks or capsizes, and situated

where personnel can reach it for manual operation. Stowage for one Category 1 EPIRB shall be internal to the pilothouse and adjacent to an external pilothouse door in its special bracket where personnel can reach it for manual or automatic deployment.

SECTION 672. [RFP] STOREROOMS**672-1 [RFP] General Requirements**

672-1.1 [RFP] Storerooms shall be fitted with fixtures and articles of equipment as specified in this Section. Bins, racks, and shelving shall be installed so as to use all the available space to the best advantage. Backs shall be provided on all shelving and bins to prevent items from falling behind the shelf. Sides and fronts of all shelving shall be provided with rails of adequate height to restrain the contents in conditions described in COR [SECTION 070](#). Rails higher than 100mm (3.94 in) shall be removable. These spaces shall be fitted and sized to store all associated equipment.

672-2 [RFP] Cleaning Gear Locker

672-2.1 [RFP] A locker shall be provided for the stowage of cleaning gear which shall include swab and broom racks.

672-3 [RFP] Equipment and Repair Parts Storage

672-3.1 [RFP] Modular, high density storage cabinets (Stanley Vidmar or equal) shall be provided to store on-board mechanical, electrical, and electronic repair parts as well as shoreside OM&S. Additional adjustable storage shelves shall be provided for portable electric and testing equipment. Storage locations shall be appropriate for the material they contain.

672-3.2 [RFP] The cabinets for Shoreside storage shall be constructed so that they can be easily installed and removed without disassembly without having to be unloaded, and so that their contents will be securely contained during transit.

SECTION 673. [RFP] DOCKING/SHIPPING CRADLE**673-1 [RFP] General**

- 673-1.1 [RFP] One docking/shipping cradle suitable for open ocean shipment of a FRC-B shall be designed. The cradle shall be designed so that it can be dismantled and shipped over the road by truck.
- 673-1.2 [RFP] A drawing shall be provided with sufficient information to fabricate and maintain the cradle. The drawing shall also detail proper cradle assembly instruction and use from the dismantled state.
- 673-1.3 [RFP] The cradle design shall preservation requirements to ensure a cradle can withstand long term outdoor storage and extended periods (one month) of exposure to sea spray. Surface preparation and paint application shall be referenced to comply with the paint manufacturer's recommendations.
- 673-1.4 [RFP] The cradle design include all lifting slings, shackles, spreader bars and other rigging necessary to lift a fully outfitted FRC-B with cradle under light-ship conditions. Slings and spreader bars shall be designed to be tested to two (02) times the required safe working load.

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 2: Circular Of Requirements (COR)
Section 700 – Armament

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SECTION 700. [RFP] ARMAMENT INSTALLATION**700-1 [RFP] General**

- 700-1.1 [RFP] This Section contains requirements for the installation of foundations and mounts for the FRC-B's armament, associated equipment, and ammunition as well as the stowage of small arms and ammunition.
- 700-1.2 [RFP] Main Gun. The primary armament for the FRC-B is the 25mm MK 38 Mod 2, remote operated, stabilized machine gun.
- 700-1.3 [RFP] A minimum of four .50 Caliber Heavy Barrel Machine Gun mounts shall be installed.
- 700-1.4 [RFP] The strength, rigidity, and alignment of the foundations shall meet those required for the safe operation of the weapons and weapon control systems.
- 700-1.5 [RFP] Requirements for safety and stowage of all ammunition shall be in accordance with [NAVSEA OP4](#).

700-2 [RFP] Main Gun

- 700-2.1 [RFP] The 25mm MK 38 Mod 2, remote operated, stabilized machine gun, and associated components shall be integrated into the design of the FRC B based on the information contained in the Interface Control Drawings (ICD) listed under COR Section 700-2.4. Weight, space and power shall be reserved for the gun mount in accordance with the ICD.
- 700-2.1.1 [A010] Interface Data For Design. The information contained in Table 700-1 is provided for preliminary design purposes. The ICDs shall be used for final design and construction.

Table 700-1

Item	Component / Parameter	Estimated Value
1.	Weapon Station (w/ ammo & platform)	
	weight	1,134kg (2,500 lbs)
	diameter	1,524mm (60 in) dia (w/ platform)
	barrel radius	2.42m (95 in)
	center of gravity	76.2mm (3 in) fwd, 709.2mm (4.3 in) stbd, 927mm (36.5 in) off bottom of station
	max vibration	33 Hz
	ROC equipment	
	weight	52.6kg (116 lbs)
2.	Main Control Panel dimensions	432mm x 356mm x 229mm (17 in x 14 in x 9 in)
3.	Multiunction Display dimensions	432mm x 305mm x 229mm) 14 in x 12 in x 9 in
4.	Junction Box dimensions	305mm x 280mm x 432mm (12 in x 11 in x 14 in)

5.	Charger dimensions	381mm x 483mm x 153mm (15 in x 19 in x 6 in)
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- 700-2.2 [A010] The FRC B Pilothouse shall be designed with a Remote Operated Console (ROC) for the gun, such as the one depicted on the ICD, in conjunction with COR Section [663-5](#). Items number 2, 3, and 4 listed in Table 700-1 shall be installed on the ROC.
- 700-2.3 [RFP] The MK 38 Mod 2 and associated components will be installed post delivery by the Government with the exception of the following which shall be provided and installed by the contractor prior to delivery:
- 700-2.3.1 [RFP] The Weapons Station Foundation, in accordance with the ICD. The location and height of the foundation shall be as required to attain a minimum engagement distance of 53m (175 ft) from the water to the center of rotation.
- 700-2.3.2 [A010] Items number 2, 3, 4, and 5 listed in Table 700-1.
- 700-2.3.3 [RFP] A dedicated Electrical Power source, as required by the ICD and COR section [300](#).
- 700-2.3.4 [RFP] The following cables shall be provided and installed to meet the requirements of [NAVSEA ICD 8180351, Rev 02](#). At least 2m (6.5 ft) of extra cable shall be provided at each end to allow for final fitting during the installation of fittings during the post-delivery installation of the weapon system. The ends shall be sealed to prevent water intrusion, corrosion, or foreign matter from damaging the cable and conductors.
- 700-2.3.4.1 [RFP] Cable W1. A cable meeting the requirements of [NAVSEA ICD 8180368, Rev E](#).
- 700-2.3.4.2 [RFP] Cable W3. A cable meeting the requirements of [NAVSEA ICD 8180369, Rev E](#).
- 700-2.3.4.3 [RFP] Cable W51. A cable meeting the requirements of [NAVSEA ICD 8180367, Rev D](#).
- 700-2.4 [RFP] The following NAVSEA Interface Control Drawings, provided as GFI, shall be used as guidance for the design and installation:
- 700-2.4.1 [RFP] [8180341 Rev 03](#)
- 700-2.4.2 [RFP] [8180343 Rev G](#)
- 700-2.4.3 [RFP] [8180354 Rev D](#)
- 700-2.4.4 [RFP] [8180351 Rev 02](#)
- 700-2.4.5 [RFP] [8180346 Rev E](#)
- 700-2.4.6 [RFP] [8180347 Rev E](#)
- 700-2.4.7 [RFP] [8180349 Rev E](#)
- 700-2.4.8 [RFP] [8180350 Rev D](#)
- 700-2.4.9 [RFP] [8180367 Rev D](#)
- 700-2.4.10 [RFP] [8180368 Rev E](#)
- 700-2.4.11 [RFP] [8180369 Rev E](#)

700-2.4.12 [RFP] [8180358 Rev –](#)

700-2.4.13 [A004] [8180357](#)

700-2.4.14 [A004] [8180359](#)

700-3 [RFP] Small Arms

700-3.1 [A010] .50 cal Machine Gun. The .50 Caliber Heavy Barrel Machine Gun mounts shall be installed, to ensure unobstructed 360° weapons coverage for the FRC-B with the fragmentation shields installed on the mounts. The trunnion height of the mount shall be 850mm (33.56 in). An unobstructed arc with a 1,350mm (53.15 in) radius is the required working area behind each mount between the positive train stops. Use of a tripod for mounting the .50 Caliber Machine Gun is not required. Interface drawings NAVSEA Drawing [No. 6086300](#) and [No. 439945](#) apply for manually operated weapons mounts.

700-3.1.1 [RFP] Storage will be provided for two government furnished .50 cal ammunition boxes adjacent to each .50 cal mount.

700-3.2 [RFP] Dedicated internal locker(s) shall be provided in the deckhouse of the FRC-B Class Patrol Boat, for the stowage of weapons. The locker(s) shall be sized to provide stowage of the following:

700-3.2.1 [RFP] Four lockable racks, each for stowage of a 0.50 caliber heavy barrel machine guns.

700-3.2.2 [RFP] One lockable gun rack suitable for stowage of four (4) 12-gauge shotguns.

700-3.2.3 [RFP] One lockable rack for stowage of four (4) M4A2 rifles and one (1) .30 caliber line throwing gun.

700-3.2.4 [RFP] One rack for ten (10).40 caliber Personnel Defense Weapons (PDW), SIGARMS model P229R-DAK.

700-3.2.5 [RFP] Ammunition stowage for the following ready service ammunition:

700-3.2.5.1 [RFP] Two 30-round magazines for each M4A2 rifle.

700-3.2.5.2 [RFP] Ten (10) rounds for the line throwing gun.

700-3.2.5.3 [RFP] Ten rounds with round holding pouch for each shotgun.

700-3.2.5.4 [RFP] Three magazines for each pistol.

700-3.2.6 [RFP] All racks shall be ESMET or equal with locks in compliance with the requirements of COR [Section 604-2.1](#).

700-3.2.6.1 [RFP] PDW racks may be ESMET Quad Racks, or equal.

700-3.2.7 [RFP] The door to the locker shall be secured with a high security lock.

700-3.2.8 [A009] For design calculations, the estimated weight for all ammunition at full load, with the exception of the 25mm ammunition, is 5,000 pounds.

700-3.3 [RFP] An ESMET TufLoc single weapon storage for an M4A2 rifle, p/n: 62-000, with Medeco lock, or equal shall be provided in the pilothouse.

700-4 [RFP] Pyrotechnics Stowage

700-4.1 [RFP] Stowage for signal lights and recognition signals including pencil flare signal kits day and night shall be in one pyrotechnics locker. The design of the

pyrotechnics locker shall be based on Coast Guard Drawing [110 WPB-763-002](#). The baseline dimensions of the locker should be altered as needed to satisfy the stowage requirements for the FRC-B's minimum pyrotechnics requirements.

700-4.2 [RFP] Pyrotechnic storage shall be located immediately aft of the Pilothouse.

700-4.3 [RFP] The Pyrotechnics Stowage locker shall be sized to include space to hang eight survival vests.

700-5 [RFP] Ready Service Locker

700-5.1 [RFP] One ready service .50 cal ammunition locker shall be provided for every two 50 cal mounts. The lockers shall be installed in the vicinity of the gun mounts so as not to interfere with traffic patterns and outside of the working circle of the gun.

700-5.2 [RFP] Locker construction shall be in accordance with [NAVSEA Dwg 804-5184210](#), Locker, .50 Cal Ammunition and [NAVSEA Dwg 804-1360106](#), Locker Details.

700-5.3 [RFP] The ready service locker(s) shall be secured with separate high security padlocks per COR [Section 604-2.1](#).

700-6 [RFP] Magazine

700-6.1 [RFP] A dedicated magazine for internal, off-mount ammunition stowage for reloads of the 25-mm minor caliber weapon station shall be provided.

700-6.1.1 [A009] Ammunition stowage for the main gun shall be provided with the capacity to hold 2,750 rounds of 25mm ammunition and 55 dummy rounds. For design calculations, the estimated weight of 25mm ammunition at full load is 5,500 pounds.

700-6.1.2 [RFP] The magazine shall be climate controlled in accordance with COR [Section 512](#).

700-6.1.3 [A013] Safety and stowage of all ammunition shall meet the requirements of [COMDTINST M8000.2C](#).

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 000-001 (A006)

BLK03-SUBTITLE: Photographs

BLK04-AUTHORITY: Photographs, RB-M (CGDI-ADMN-93002)

BLK05-CONTRACT REF: SOW Section C.9.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: A

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 04: Modify DID BLK05 as follows: Change G-ARB to CG-936 (G-AWP).

BLK 12: Photographs are due NLT 10 days after taken.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 000-002 (A006)

BLK03-SUBTITLE: Interim Contractor Support Plan (ICSP)

BLK04-AUTHORITY: Integrated Support Plan (ISP) (DI-ILSS-80395)

BLK05-CONTRACT REF: SOW Section C.17.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 360 DAC

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 04: The Interim Contractor Support Plan (ICSP) shall be in the contractor's format and shall describe the contractor's plans for the management, control, execution, interface and integration of all aspects of the Contractor's interim support efforts.

Change all MIL-STD-1388-1 and 2 (when utilized) and MIL-STD-440 references to MIL-HDBK-502 and MIL-PRF-49506.

SECTION 4 (ILS PROGRAM TASKS): Change sentence to read, "Provide a detailed description of plans for the accomplishment of interim logistics support task(s) and subtask(s) as reflected in the contract as they relate to development and implementation of interim contractor support. The contents of the ICSP shall address plan requirements as contained in SOW Section C.17.

BLK 08: Government review and approval for content, management approach, and completeness. Allow 45 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 000-003 (A006)

BLK03-SUBTITLE: Contract Problem Identification Reports (CPIRs)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: Contract Clause H.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK10: In accordance with Contract Clause H.5.
BLK12: In accordance with Contract Clause H.5.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 000-004 (A006)

BLK03-SUBTITLE: Government Property Report

BLK04-AUTHORITY: Government Property Physical Inventory Count of Custodial Balance Report (DI-MGMT-80441)

BLK05-CONTRACT REF: Contract Clause H.29.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ANNLY

BLK12-DATE OF 1ST SUBM: See Blk 16

BLK13-DATE OF SUBS SUBM: See Blk 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: In Paragraph 3.1, change "Management Control Activity (MCA)" or "Accountable Supply Distribution Activity (ASDA)" to "U.S. Coast Guard (USCG)".

In Paragraph 3.2, change "MCA" and "ASDA" to "USCG".

In Paragraph 10.2.2, change "MCA" and "ASDA" to "USCG".

BLKs 12/13: Reports shall be submitted 5 days after reporting period (5 DARP); each year on 1 September.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 000-005 (A014)

BLK03-SUBTITLE: Periodic Release

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: Contract Clause H.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Paragraphs 10.1 and 10.2 apply except that the format shall comply with the partially completed form SF-30 provided in the attachment CDRL_000-005_Attachment1.doc.

BLK 10: In accordance with Contract Clause H.5.

BLK 12: In accordance with Contract Clause H.5.

BLK 13: The Contracting Officer will sign and return a copy of the Periodic Release within 60 days of receipt of a proper Periodic Release submission. The Contractor shall resubmit any Periodic Release found insufficient within 15 DARC.

ATTACHMENTS: CDRL_000-005_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 041-001 (A006)

BLK03-SUBTITLE: Configuration Management Plan (CMP)

BLK04-AUTHORITY: Contractor's Configuration Management Plan (DI-CMAN-80858B)

BLK05-CONTRACT REF: COR Section 041-1.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 120 DAC, See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID as follows:
Change DID reference from MIL-HDBK-61 to MIL-HDBK-61A and
ANSI/EIA-649-1998 to ANSI/EIA-649A-2004. Organize the plan according
to Table A-3, Contractor CM Plan Content, in MIL-HDBK-61A.

BLK08: Allow 30 days for Government review and approval.
.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 041-002 (A010)

BLK03-SUBTITLE: Configuration Status Report

BLK04-AUTHORITY: Configuration Status Accounting Information (DI-CMAN-81253A_CSA)

BLK05-CONTRACT REF: COR Section 041-1.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR; See BLK16

**BLK13-DATE OF SUBS
SUBM:** Monthly; See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
Change DID reference from MIL-HDBK-61 to MIL-HDBK-61A and
ANSI/EIA-649-1998 to ANSI/EIA-649A-2004.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK12: Allow 30 days for Government comments.

BLK13: Monthly after final approval of initial submittal.

BLK16: The report shall contain at a minimum all data elements in
Attachment 1. The contractor is responsible for gaining access to the
CDMD-OA website after Contract Award via the official CDMD-OA website
www.cdmd.navy.mil. The contractor shall be responsible for obtaining the
required certifications and user training for access and use of CDMD-OA.

ATTACHMENTS: CDRL_041-002_Attachment1_A010.xls

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 041-003 (A006)

BLK03-SUBTITLE: Physical Configuration Audit (PCA) Report

BLK04-AUTHORITY: Configuration Audit Summary Report (DI-CMAN-81022C_PCA)

BLK05-CONTRACT REF: COR Section 041-3.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK16

BLK13-DATE OF SUBS SUBM: 7 DARC, See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID as follows:
The PCA report shall be based on configuration baseline current as of the date of the audit. In an executive summary, specifically highlight any discrepancies found between the data and the boat. Provide a recommended resolution for each. In the body of the report, organize results by SWBS group. For those SWBS groups that contain no discrepancies and no Government comments, simply report "No Discrepancies". Change reference from MIL-HDBK-61 to MIL-HDBK-61A and ANSI/EIA-649-1998 to ANSI/EIA-649A-2004.

BLK12: First submission is due 7 calendar days after the conclusion of the audit. Government will provide comments within 14 days.

BLK13: Government will provide comments within 10 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 041-004 (A006)

BLK03-SUBTITLE: Engineering Change Proposals (ECP)

BLK04-AUTHORITY: Engineering Change Proposal (ECP) (DI-CMAN-80639C), Notice of Revision (NOR) (DI-CMAN-80642C)

BLK05-CONTRACT REF: COR Section 041-4.2; Contract Clause H.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 4

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK04: Modify DID as follows:
Replace all references of DID version "B" with version "C". Change reference from MIL-HDBK-61 to MIL-HDBK-61A and ANSI/EIA-649-1998 to ANSI/EIA-649A-2004. DD Form 1692 is required to be submitted with every ECP, in addition to any other documentation required for ECPs.

BLK08: Government review and approval for technical content, completeness, format and clarity. Allow 30 days for Government review and approval. Upon ECP approval, Contractor shall submit Notice of Revision (NOR) if appropriate, within 30 days after ECP implementation.

BLK 12: Submit 30 days after each need is identified. Allow 30 days for review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 041-005 (A006)

BLK03-SUBTITLE: Request for Deviation (RFD)

BLK04-AUTHORITY: Request for Deviation (RFD) (DI-CMAN-80640C)

BLK05-CONTRACT REF: COR Section 041-4.3; Contract Clause H.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** ASREQ, See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 4

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK04: In addition to information required in paragraph 2 of DID submit DD Form 1694 with every RFD. Change DID reference from ANSI/EIA-649-1998 to ANSI/EIA-649A-2004.

BLK08: Allow 30 days for Government review and approval.

BLK10: As the need for deviation is identified.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 041-006 (A006)

BLK03-SUBTITLE: Technical Information Management and Control Plan (TIMCP)

BLK04-AUTHORITY: Management Plan (DI-MGMT-80004)

BLK05-CONTRACT REF: COR Section 041-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ANNLY

**BLK12-DATE OF 1ST
SUBM:** 60 DAC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK08: Government review and approval for technical content, completeness, format and clarity. Allow 30 days for Government review and approval.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-001 (A006)

BLK03-SUBTITLE: General Correspondence

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 042-7.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** ASREQ; See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 3

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 12: All correspondence by the Contractor with the Coast Guard shall be addressed to the Contracting Officer (original and two copies). Three copies of all correspondence (including phone conversation summaries) between the Contractor and Regulatory and Standards Bodies shall be provided to the Contracting Officer NLT 10 days of receipt.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-002 (A006)

BLK03-SUBTITLE: Meeting Agenda

BLK04-AUTHORITY: Conference Agenda (DI-ADMN-81249A)

BLK05-CONTRACT REF: COR Section 042-9.1, Contract Sections H.20.4, and H.23.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: No modification to DID

BLK10: For each scheduled meeting.

BLK12: 10 days prior to each meeting, or as otherwise agreed to by the Contracting Officer.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-003 (A006)

BLK03-SUBTITLE: Meeting Minutes

BLK04-AUTHORITY: Conference Minutes (DI-ADMN-81250A)

BLK05-CONTRACT REF: COR Section 042-9.1, Contract Sections H.20.4 and H.23.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 10 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: No modification to DID.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: For each meeting.

BLK12: Draft minutes are to be distributed after each meeting. Final minutes are to be delivered 5 days after the conclusion of the meeting, or as otherwise agreed to by the Contracting Officer. The draft minutes are to be completed and distributed at the end of each meeting for review. In case a complex situation arises, the contracting officer may allow the draft minutes to be distributed at the beginning of the next business day.

BLK13: Allow 10 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-004 (A006)

BLK03-SUBTITLE: Contract Work Breakdown Structure (CWBS)

BLK04-AUTHORITY: Contract Work Breakdown Structure (CWBS) (DI_MGMT_81334B)

BLK05-CONTRACT REF: COR Section 042-11.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 15 DPPDR, See BLK16

**BLK13-DATE OF SUBS
SUBM:** 15 DARC, See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
Replace the following text in the first sentence "as applicable, in MIL-HDBK-881" with "using the guidance in MIL-HDBK-881A".
Delete the sentence "The final CWBS must agree with the contract Cost and Software Data Reporting (CSDR) Plan approved by the OSD Cost Analysis Improvement Group (CAIG) Chair."

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK12: Allow 15 days for Government review.

BLK13: Allow 15 days for Government review.

BLK14: No hard copy required; delivery by electronic media only, by XML format compatible with Deltek Systems Inc. wInsight, Microsoft Word, Excel, Powerpoint, Project, or Access files on FRC-B extranet.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-005 (A006)

BLK03-SUBTITLE: Program Management Plan

BLK04-AUTHORITY: Management Plan (DI-MGMT-80004)

BLK05-CONTRACT REF: COR Section 042-12.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DAC; see BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC; see BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for completeness, format and clarity.

BLK 12: Allow 30 days for Government review.

BLK 13: Allow 30 days for Government review

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-006 (A006)

BLK03-SUBTITLE: Integrated Master Schedule (IMS)

BLK04-AUTHORITY: Ship Construction Schedules (CGDI-ADMN-90003A), Integrated Master Schedule (IMS) (DI-MGMT-81650)

BLK05-CONTRACT REF: COR Section 42-13.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A (See BLK16)

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: WEEKL

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: Weekly

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID DI-MGMT-81650 as follows:

Delete the phrase "it is not typically applied to full rate production efforts" in the first paragraph. The DID applies to the entire contract effort.

In paragraph b, the EVMIG may be used for guidance where it does not conflict with other contract requirements.

In paragraph 1, the delivery format for the IMS is specified in BLK14.

Add to paragraph 2: The IMS shall contain all CDRL submissions, including the initial and, where required/expected, subsequent submissions for each CDRL deliverable. For CDRLs requiring approval, the CDRL submissions in the IMS must account for Government review time and demonstrate that a CDRL is being submitted early enough to receive approval prior to its required due date. The IMS shall identify a point in time by which a subsequent option CLIN exercises must be received to avoid a break in production.

BLK08: Government review and approval of the initial submission for completeness, format and clarity. Weekly status submissions do not

require approval.

BLK12: Allow 15 days for Government review and approval (for the first submission only).

BLK14: Deliver in XML format compatible with Deltek Systems Inc. wInsight software.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 042-007 (A006)

BLK03-SUBTITLE: Purchase Order Index

BLK04-AUTHORITY: Purchase Orders, Copies of/Index of (CGDI-ADMN-90014B)

BLK05-CONTRACT REF: COR Section 042-14

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: Monthly (See BLK 16)

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID CGDI-ADMN-90014B as follows:
Paragraph 10.2 delete section M
Paragraph 10.2 Change "The following report sorts are required:" to read
"The following report sorts are required and shall be posted to the IPDE
Monthly:"

BLK12: 1st submission shall be concurrent with the issue of the 1st
Purchase Order for the FRC-B

BLK13: Subsequent submissions shall be posted to the IPDE Monthly until
all Purchase Orders and Purchase Order changes are complete.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 043-001 (A006)

BLK03-SUBTITLE: Life Cycle Cost Estimate (LCCE) Input

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 043-1.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR, See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
Replace paragraph 2(c) with:
2(c) Provide information in accordance with COMDTINST 7310.1I for the Coast Guard's Life Cycle Cost Estimate (LCCE) of the FRC-B System, broken down by year, for the service life specified in COR Section 070. The data provided shall be comprehensive and structured to identify all cost elements, primarily with respect to operations (i.e. fuel consumption) and maintenance (organizational, intermediate, and depot level) costs. Use the rates found in Coast Guard Instruction COMDTINST 7310.1I, Standard Rates, provided as GFI, as guidance for accumulating the labor costs associated with the maintenance of the FRC-B. Include, at a minimum, the following life cycle cost categories:
1. Operating Costs
1.1 Fuel Consumption, assuming the hours of operation and mission profile described in COR Section 070, Table 070-1.
1.2 Other operating costs.
2. Scheduled Maintenance Costs
2.1 Organizational Level (O-Level) Maintenance, categorized by MPC and broken out in terms of labor (Military/contracted) and materials.
2.2 Depot Level (D-Level) Maintenance, categorized by BCMP line item and broken out in terms of labor and materials.

Replace 2(d) with:

2(d) Provide the following Unscheduled Maintenance cost estimates:

1. For each CILRU on the MECL, provide:

1.1 Estimated replacement cost for the item, less shipping and handling (should match MECL data field U/I Price).

1.2 Estimated labor hours for the remove and replace procedure developed in COR Section 081 and COR Section 086.

BLK12: First submission may be based on the Contractor's proposal, insofar as it matches the Functional Configuration Baseline. Thereafter, submissions shall reflect the most currently available information, including that affected by any approved Engineering Changes.

BLK13: LCCE Input shall be updated and submitted quarterly until the Product Configuration Baseline is accepted, at which time the LCCE Input shall be updated and submitted semi-annually for the duration of the performance period.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 045-001 (A006)

BLK03-SUBTITLE: Launching, Docking and Undocking Procedures

BLK04-AUTHORITY: Documentation, Launching (CGDI-MISC-90007), Docking Procedures
Documentation and Dockmaster Qualification (CGDI-MISC-90013)

BLK05-CONTRACT REF: COR Section 045-4.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 300 DAC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 4: DID CGDI-MISC-90007 applies in its entirety for launching
procedures and document format. DID CGDI-MISC-90013 applies for
docking/undocking procedures.

BLK 8: Review and approval for technical content, completeness,
adequacy, and applicability. Allow 30 days for Government review.

BLK 12: Submit any changes to current procedures NLT 30 days prior to
scheduled launching, docking, or undocking of vessel.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 045-002 (A006)

BLK03-SUBTITLE: Grounding/Damage/Collision Report

BLK04-AUTHORITY: Report, Grounding/Damage/Collisions (UDI-A-26360)

BLK05-CONTRACT REF: COR Section 045-4.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: Modify DID as follows:
Section 10.3 to include the following; Each detailed damage report shall include results of underwater damage (when appropriate), the reasons for the occurrence, and the impact on construction schedules. In addition, all reports shall include photographic evidence of all reported damage.

BLK10: Submit in accordance with COR Section 045.

BLK12: Submit preliminary Grounding/Damage/Collision Report within 24 hours after occurrence.

BLK13: Submit detailed report NLT 14 days after occurrence.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 045-003 (A006)

BLK03-SUBTITLE: De-ratting Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 045-4.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: N/A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** CDD

**BLK13-DATE OF SUBS
SUBM:** N/A

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS:

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 045-004 (A006)

BLK03-SUBTITLE: Fire Prevention and Protection Plan

BLK04-AUTHORITY: Fire Protection Plan, Organization Chart and Instruction and Flooding Chart (UDI-A-23075A)

BLK05-CONTRACT REF: COR Section 045-5.2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 30 DPCDR

BLK13-DATE OF SUBS SUBM: ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 08: Government review and approval for content, completeness, and clarity.

BLK 13: 30 days after a change is identified.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 045-005 (A006)

BLK03-SUBTITLE: Flooding Prevention and Protection Plan

BLK04-AUTHORITY: Fire Protection Plan, Organization Chart and Instruction and Flooding Chart (UDI-A-23075A)

BLK05-CONTRACT REF: COR Section 045-5.3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 30 DPCDR

BLK13-DATE OF SUBS SUBM: ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 4: Change paragraph 10.2 to, "Plan shall identify locations of audio/visual alarms and charts in work areas that alert the work force of emergency conditions requiring personnel to abandon ship."

BLK 8: Approval will be for for technical content, completeness, format and clarity. Allow 30 days for Government review and comment.

BLK 13: 30 days after a change is identified.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 045-006 (A006)

BLK03-SUBTITLE: Destructive Weather Plan

BLK04-AUTHORITY: Destructive Weather Plan (DWP) (OT-50198)

BLK05-CONTRACT REF: COR Section 045-5.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:** ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: In BLK 05, replace G-AWL with CG-936 (G-AWP).

BLK 08: Government review and approval for technical content, completeness, format and clarity. Allow 30 days for Government review and approval.

BLK 13: 30 days after a change is identified.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 068-001 (A006)

BLK03-SUBTITLE: Systems Engineering Management Plan (SEMP)

BLK04-AUTHORITY: System Engineering Management Plan (SEMP) (DI-MGMT-81024)

BLK05-CONTRACT REF: COR Section 068-1.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: 15 DARC; See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:

10.2.1.i - Add: The following EIA-632 requirements shall be used as guidance on how the requirements allocation is developed, maintained, and used throughout the life of the program:

- Requirement 16; System Technical Requirements
- Requirement 17; Logical Solution Representations
- Requirement 18; Physical Solution Representations
- Requirement 19; Specified Requirements

10.2.2 - Add: The following EIA-632 requirements shall be used as guidance in development of Technical Program Planning and Control:

- Requirement 25; Requirements Statement Validation
- Requirement 28; System Technical Requirements Validation
- Requirement 29; Logical Solution Representations Validation
- Requirement 30; Design Solution Verification

10.2.2.a - Risk Assessment and Management: This section shall include the project aspects of risk identification (sources and causes), risk characterization (effects, probabilities, choices, time frame, and coupling), risk prioritization (greatest harm, greatest effect, and time urgency), and risk aversion (mitigation, avoidance, transfer, and acceptance). The

assessment shall identify critical areas and further investigate the need for additional prototyping, testing, or back up development to minimize risk. The assessment shall also identify test requirements, technical performance measures, parameters, and critical milestones for those areas identified. The risk management functions to be performed by assigned teams and by supporting analysts and specialists as well as the acceptable levels of risk for a particular enterprise-based life-cycle phase, or group of phases, shall be included.

10.2.2.e – This section shall describe the manner in which the contractor’s program reviews shall assess, reoptimize, and redirect the technical program effort during the course of the contractual effort.

10.2.2.f – Change the title of the section to Design Reviews.

10.2.2.h - Change the title of the section to Technical Information Management and Control.

10.2.2.j – Add: Tradeoff studies shall consider at a minimum the intra- and inter-relationships among the following:

- Life Cycle Cost
- Construction
- Operating
- Logistics
- Maintenance
- Reliability and Maintenance
- Manpower
- Training
- Supply Support
- Engineering Support
- Operational Availability
- Mission Performance
- Risk
- System Safety
- Human Systems Integration

10.2.2.k – Testing Trials and Verification. This section shall describe the plan for technical performance tracking and reporting iaw Testing, Trials, and Verification (COR Section 092) and include the following:

10.2.2.k (2) – Delete

10.2.2.k (7) (f) - Delete

10.2.3 Part III – Engineering Integration. This part of the SEMP shall describe the methods by which the contractor proposes to integrate the engineering efforts. It shall include a summary of each specialty program and cross reference the individual plans covering specialty programs such as, but limited to, the Integrated Support Plan, Human Systems Integration Plan, Weight Control Plan, and Quality Plan. Engineering specialty integration shall be discussed as well as the relationship of the engineering with the overall logistic efforts.

10.2.3.a. System Safety Plan. IAW COR Section 077, this section shall describe the contractor’s activities to identify the hazards of the FRC and its subsystems and impose design requirements and management controls to prevent mishaps.

10.2.3 b. Integrated Support Plan. IAW COR Section 080, this section shall describe the contractor's efforts to integrate the logistics effort with the system design and engineering, supportability analysis, and material selection processes to optimize logistics support for system and equipment.

BLK10: Two times, with revisions. The first deliverable need only consist of an outline and executive summary for each section. The second deliverable shall contain all information required by the DID and be updated with revisions as necessary to reflect changes in the Contractors organization or plan.

BLK 12: The first submission of the first deliverable is due 45 DPPDR. Allow 30 days for Government review. The first submission of the second deliverable is due 45 DPCDR. Allow 30 days for Government review.

BLK 13: Revisions are due 30 days after the organizational or planning change requiring the revision. Allow 30 days for Government review.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-001 (A006)

BLK03-SUBTITLE: Classification Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-002 (A006)

BLK03-SUBTITLE: International Tonnage Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-003 (A006)

BLK03-SUBTITLE: Panama Canal Tonnage Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-004 (A006)

BLK03-SUBTITLE: Suez Canal Tonnage Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-005 (A006)

BLK03-SUBTITLE: Load Line Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-006 (A006)

BLK03-SUBTITLE: Navigational Rules, International - Inland (COLREGS)

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-007 (A006)

BLK03-SUBTITLE: ABS Lifting Appliance Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-008 (A006)

BLK03-SUBTITLE: Certificate of Sanitary Construction

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.7

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-009 (A006)

BLK03-SUBTITLE: Deratting Exemption Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.7

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-010 (A006)

BLK03-SUBTITLE: International Code of Safety for High Speed Craft (IMO HSC Code)
Statement of Voluntary Compliance (SOVC)

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.8

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final
certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-011 (A006)

BLK03-SUBTITLE: IMO Marine Pollution Prevention (MARPOL Annex I) SOVC

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.2.9

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-012 (A006)

BLK03-SUBTITLE: Emissions Certificate

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 070-1.1.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** Interim at Delivery

**BLK13-DATE OF SUBS
SUBM:** 90 DAD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit interim certificate for each FRC-B at delivery. Submit final certificate for each FRC-B NLT 90 days after delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 070-013 (A006)

BLK03-SUBTITLE: Lamination Quality Assurance Program Manual

BLK04-AUTHORITY: Laminating Process Description (Boats) (DI-MISC-80703)

BLK05-CONTRACT REF: COR Section 070-8.2.2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR, See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Only required if FRP construction is used on the FRC-B.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-001 (A006)

BLK03-SUBTITLE: Noise Control Plan

BLK04-AUTHORITY: Limited Noise Control Plan (DI-HFAC-81202)

BLK05-CONTRACT REF: COR Section 073-2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: A Noise Control Plan shall be prepared that formally describes the shipbuilder's Noise Control Program. The extent and depth of the FRC-B Noise Control Plan shall be dependent on the analysis results described in COR Section 073-2.4. With Coast Guard approval, the airborne noise modeling effort may be scaled back from what is described below for parent craft spaces that could be expected to meet the FRC-B noise requirements:

SNAME T&R Bulletin 3-37, Jan 1983, provides detailed requirements for an effective Noise Control Plan and includes the following steps:

1. Review of initial ship design, creation of noise prediction model, and initial acoustic treatment selection.
2. Optimization of selected acoustic treatment materials by comparing selections between spaces and elimination of unnecessary and redundant choices.
3. Integrating proposed acoustic treatments with cutter design constraints and subsequent final equipment/material selection.
4. Developing acoustic noise control treatment design details.
5. Confirmation/correction of treatment effectiveness during sea trials.

For guidance in developing the Noise Control Plan:

- a. Silencing features (e.g., absorptive and transmission loss treatments,

resilient mounts, structural damping, floating floors, acoustic enclosures, etc.) required to meet space noise levels should be identified as soon as possible in the design to ensure adequate space and weight can be reserved. The noise prediction model shall be a primary design decision-making tool to determine the acoustic impact of these decisions.

b. Flexible space arrangements should be used to minimize the use of silencing features. (Use of unmanned buffer spaces between high noise spaces and noise critical habitability or command and control spaces is strongly encouraged). Office, berthing, lounge, and messing spaces should be kept as far as possible from the propellers and machinery spaces that contain diesel engines or other sources of high-level

c. For Category G spaces, use of personal hearing protection is to be a last resort when effective noise reduction methods are not practical or are too expensive. Communication and efficient work practices are extremely difficult in such noisy spaces. Maximum practical use of silencing treatments is therefore encouraged. Acoustic enclosures are allowed around diesel engines to allow such spaces to be rated Category D (non-hearing hazardous even without personal hearing protection). Acoustic enclosure design shall address equipment access and maintenance concerns as well as desired acoustic performance.

d. Equipment airborne and structureborne noise limits shall be required only when the noise prediction model identifies a space (s) that is at risk of not meeting its airborne noise requirements. Equipment noise limits shall be imposed on machinery noise sources that either control, or significantly contribute to, the high airborne noise levels within the subject spaces. Equipment noise limits shall be determined based on the noise prediction results and are to be included in subject equipment procurement specifications. MIL-STD 740-2 and MIL-STD 1474D are to be used as guidance for valid measurement equipment airborne and structureborne measurement techniques. The equipment noise levels contained within the referenced standards are not applicable.

BLK04: Change DI-HFAC-81202 Section 10.2 to read "The Noise Control Plan shall specify and explain the approach, procedures, and organizational controls to be implemented to ensure compliance with noise control aspects of the ship specifications' requirements. The Noise Control Plan shall address the following:" Change DI-HFAC-81202 Section 10.2.1 to read "Performance and review of airborne noise analysis (including Heating, Air Conditioning, Ventilation), machinery resilient mount system analysis, and machinery resiliently mounted systems."

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: A revision shall be provided within any phase if design decisions cause a change in the expected airborne noise levels. The revision requires re-submittal and approval.

BLK12: 30 DPPDR (30 days Government review)

BLK13: 30 DPCDR (30 days Government review and approval)

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-002 (A006)

BLK03-SUBTITLE: Noise Control Design History

BLK04-AUTHORITY: Design Data, Analyses and Calculations (CGDI-GDRQ-80094)

BLK05-CONTRACT REF: COR Section 073-2.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 120 DAC

BLK13-DATE OF SUBS SUBM: R/ASR (see BLK 16)

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: The Noise Control Design History shall document the noise prediction model and related information including the following:

- a. updated prediction results as new acoustic design information becomes available;
- c. cutter silencing features;
- d. acoustic design decisions/rationale;
- e. equipment airborne and structureborne noise performance requirements and measurement results;
- f. summary table of airborne noise survey results; data will be presented in CDRL 073-003.
- g. description of diagnostic acoustic measurements on spaces that do not meet noise performance requirements;
- h. summary of diagnostic measurement results; data will be presented in CDRL 073-003.
- i. description of silencing modifications required to bring spaces into compliance;
- j. and resultant effectiveness of silencing modifications/ final compliance with noise performance requirements.

BLK04: In BLK 05, replace G-APS with CG-936 (G-AWP).

BLKs 10, 12, and 13:

Document shall be updated as new acoustic design information becomes available. Examples include:

- a. Baseline machinery noise predictions, documenting results and providing a description of the required silencing - NLT 30 days after completion baseline noise predictions.
- b. Updated noise predictions as HVAC System design is completed, documenting results and providing a description of the required silencing - NLT 60 days after completion of HVAC design.
- c. Updated noise predictions as equipment airborne and structureborne noise measurement results become available - NLT 30 days after receipt of equipment vendor test reports.
- d. Summary of airborne noise survey and description of planned diagnostic acoustic measurements - NLT 60 days after completion of trials.
- e. Summary of acoustic diagnostic test results, updated silencing predictions, and planned silencing corrective actions to bring space into compliance with airborne noise requirements - NLT 60 days after completion of diagnostic tests.
- f. Summary of results of post-modification airborne noise survey - NLT 30 days after completion of subject trial.

BLK 13: Revise in accordance with Government comments. Allow 30 days for review.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-003 (A006)

BLK03-SUBTITLE: Airborne and Far Field Noise Survey

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 073-2.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** NLT 30 days after completion of subject trials

**BLK13-DATE OF SUBS
SUBM:** NLT 30 days after any follow-up diagnostic tests

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS:

1. An airborne noise survey shall be conducted in accordance with ISO 2923 (1996).
2. The airborne noise survey shall be made over several representative speeds and operating conditions including full propulsion power. Exceptions to ISO 2923 follow: Octave-band, A-weighted, and C-weighted measurements shall be made at each airborne noise measurement location. Octave-band measurements are required in each berthing space. In berthing spaces, measurements shall be made near the center of the room and at each position that represents a person's head laying on the bunk. Additional measurement conditions shall be established as necessary to demonstrate compliance with the noise requirements. Examples include launching/recovery of boats, operation of galley exhaust hoods, operation of main propulsion engines (if not run because loiter engines are available), etc.
3. Spaces that exceed the allowable noise levels shall be identified. Diagnostic measurements shall be made to determine the controlling noise sources and transmission paths of spaces that do not meet their noise performance requirements.
4. Corrective actions shall be identified and implemented. Repeat noise

surveys shall be made to demonstrate compliance once silencing modifications have been installed. Results shall be documented in a revision to this deliverable.

Far Field Noise:

1. A shoreline sound level measurement shall be conducted in accordance with SAE J1970 (2003-09).

2. Corrective actions shall be identified and implemented. Repeat noise surveys shall be made to demonstrate compliance once silencing modifications have been installed. Results shall be documented in a revision to this CDRL.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLKs 10, 12, and 13:

Initial submission shall document results of airborne noise survey and identify spaces that meet/do not meet their noise performance requirements. Revisions shall document results of diagnostic acoustic measurements and acoustic results of silencing modifications. Description of airborne noise survey companies, individuals, and equipment shall be provided the first time each is used.

Government will provide comments within 30 days.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-004 (A006)

BLK03-SUBTITLE: Mechanical Vibration Survey Report

BLK04-AUTHORITY: Technical Information Report (DI-MISC-80652)

BLK05-CONTRACT REF: COR Sections 073-4.1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** NLT 30 days after submission of subject trials

**BLK13-DATE OF SUBS
SUBM:** NLT 30 days after any follow-up diagnostic tests

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 5:
1. A vibration survey shall be conducted in accordance with ISO 4867 and 4868.

2. Spaces that exceed the allowable vibration levels shall be identified. Diagnostic measurements shall be made to determine the cause of the excessive vibration levels.

3. Corrective actions shall be identified and implemented. Repeat vibration surveys shall be made to demonstrate compliance once corrective modifications have been installed. Results shall be documented in a revision to this CDRL.

4. As part of the vibration survey, torsional vibration tests shall be conducted on the propulsion system that comply with ANSI S2.27 and SNAME T&R Bulletin 2-29A. Measured results shall be compared to the predicted results of the Propulsion Shafting System Vibration Analysis (CDRL 085-210).

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLKs 10, 12, and 13:

Initial submission shall document results of mechanical vibration survey and identify locations that meet/do not meet their vibration performance requirements. Revisions shall document results of diagnostic measurements and results of corrective modifications. Description of vibration survey companies, individuals, and equipment shall be provided the first time each is used.

Government will provide comments within 30 days.

BLK 13: Subsequent revisions required to remedy any unsatisfactory conditions.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-005 (A006)

BLK03-SUBTITLE: Resilient Mountings Analysis/Certification

BLK04-AUTHORITY: Design Data, Analyses and Calculations (CGDI-GDRQ-80094)

BLK05-CONTRACT REF: COR Sections 073-5.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: SEE BLK 16.

BLK13-DATE OF SUBS SUBM: ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: In BLK 05, replace G-APS with CG-936 (G-AWP).

BLK05: Resilient mount design analysis shall be performed as required by COR Section 073-5.3. The following design aspects shall be addressed:

- a. Resilient mount selection and arrangement.
- b. Resilient mount loading and deflection due to both static machinery weight and torque reaction (as appropriate).
- c. Rigid body natural frequency calculation results per COR Section 073-5.3.
- d. Equipment excursion envelopes when subjected to torque reactions and design environmental loads of COR Section 045-7. Calculated excursions at each mechanical interface point (e.g., flexible pipe connections, inlet or exhaust flex bellows) shall be tabulated and compared to deflection capacity of each flexible piping connection device.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 12: The analysis shall be provided 30 days prior placement of purchase orders for mounts (e.g., flexible pipe connections, inlet or exhaust flex bellows). The certification shall be provided 10 days prior to installation.

BLK 13: A revision shall be provided within 10 days of design decisions or updated information that cause a change in the equipment weight, number or type of resilient mounts, or mass moment of inertia. The revision requires re-submittal and approval.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-006 (A006)

BLK03-SUBTITLE: Propulsion Torsional Vibration Analysis

BLK04-AUTHORITY: Design Data, Analyses and Calculations (CGDI-GDRQ-80094)

BLK05-CONTRACT REF: COR Section 073-7.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: In BLK 05, replace G-APS with CG-936 (G-AWP).

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 073-007 (A010)

BLK03-SUBTITLE: Propulsion Torsional Vibration Report

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Sections 073-8.1 and 200-2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit Torsional Vibration Report NLT 14 Days after Test
Completion.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 074-001 (A006)

BLK03-SUBTITLE: Non--Destructive Testing (NDT) Procedures

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 074-3.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK10: See COR 074-3.2.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 074-002 (A006)

BLK03-SUBTITLE: Weld Procedure Specifications, Procedure Qualification Records, and Welder Qualifications

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 074-4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
A list of Contractor Welding Procedure Specifications (WPSs) and associated revision dates that shall at a minimum include all applicable weld processes.
Welder qualification documentation to include the last date the welder performed the indicated process.
Supporting Procedure Qualification Records (PQRs) and full WPS documentation.

BLK12: First submission no later than 30 days prior to any individuals commencing welding under this contract. Allow 30 days for government review.

BLK13: Allow 30 days for government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 076-001 (A006)

BLK03-SUBTITLE: Reliability, Maintainability and Availability (RM&A) Analysis

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 076-1.3.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 60 DPCDR

**BLK13-DATE OF SUBS
SUBM:** See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Develop and provide Reliability, Maintainability and Availability information and data in accordance with the COR.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 13: Final submission shall be submitted 120 DACDR. Revisions shall be submitted as required by availability of additional data. Allow 30 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 076-002 (A006)

BLK03-SUBTITLE: Level of Repair Analysis (LORA)

BLK04-AUTHORITY: Level of Repair Analysis (LORA) Report (DI-ILSS-80655)

BLK05-CONTRACT REF: COR Section 076-3.3.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:** See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content, accuracy
and completeness. Allow 30 days for Government review.

BLK 13: Final submission NLT 120 DACDR.

ATTACHMENTS: CDRL_076-002_Attach1.doc, CDRL_076-002_Attach2.xls

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 077-001 (A013)

BLK03-SUBTITLE: System Safety Program Plan and Reports

BLK04-AUTHORITY: SYSTEM SAFETY PROGRAM PLAN (SSPP) (DI-SAFT-81626)

BLK05-CONTRACT REF: COR Section 077-1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 90 DAC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 077-002 (A013)

BLK03-SUBTITLE: Closed Loop Hazard Tracking System Database

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 077-1.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: The report shall document all identified hazards; hazard severity and probability of occurrence; all actions that are taken to mitigate or avoid risks associated with the identified hazards; the results/impact of any actions taken; and the status of the hazard (e.g., open, closed).

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 077-003 (A006)

BLK03-SUBTITLE: Weapons System Safety Audit

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 077-1.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** PDR

**BLK13-DATE OF SUBS
SUBM:** ASREQ, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 8: Review for technical content, clarity and completeness. Allow 30 days for government review.

BLK 13: Allow 30 days for Government review. Resubmit 30 DARC.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 077-004 (A006)

BLK03-SUBTITLE: MSDS Book

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 077-2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 2 MPTD

**BLK13-DATE OF SUBS
SUBM:** 15 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK04: Modify DID as follows:

Replace 2(c) with:
Section I - Index of Hazardous Materials
(1) Sorted by name with cross-reference to Section II
(2) Sorted by FRC system with cross-reference to Section II

Replace 2(d) with:
Section II - Material Safety Data Sheets. Provide all of the information required by 29 CFR 1910.1200. Prepare in accordance with the latest version of Federal Standard No. 313 (Material Safety Data Sheet, Preparation and Submission of). Use the format prescribed in Attachment 1, or a suitable equivalent.

BLK10: A MSDS Book, reflecting the current configuration baseline, is required for each cutter delivered.

BLK13: Allow 30 days for Government Review.

BLK14: For Hard Copies, provide one paper copy bound in an appropriate binder or durable cover, and one CD-ROM copy.

ATTACHMENTS:

OSHA 174.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 077-005 (A013)

BLK03-SUBTITLE: System Safety Hazard Analysis Report

BLK04-AUTHORITY: System Safety Hazard Analysis Report (SSHA) (DI-SAFT-80101B)

BLK05-CONTRACT REF: COR Section 077-1.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 10: The Hazard analysis shall be submitted 30 days prior to PDR and
CDR.

BLK 13: Government will provide comments within 30 days. The
Contractor shall resubmit within 30 DARC.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 079-001 (A006)

BLK03-SUBTITLE: Stability and Loading Data Booklet

BLK04-AUTHORITY: Stability and Loading Data Booklet (CGDI-NDTI-90050)

BLK05-CONTRACT REF: COR Section 079-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: NOTE: (The Stability and Loading Data Booklet for the 110' WPB Island Class is provided as Government Furnished Information (GFI) for general guidance purposes only and is not to be construed as a format requirement.)

BLK 04: Change G-ENE to CG-45.

BLK 12: Stability Booklet is due NLT 30 days after inclining experiment.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 080-001 (A006)

BLK03-SUBTITLE: Integrated Support Plan (ISP)

BLK04-AUTHORITY: Integrated Support Plan (ISP) (DI-ILSS-80395)

BLK05-CONTRACT REF: COR Section 080-1.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 60 DAC

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: The ISP shall describe the contractor's plans for the management, control, execution, interface and integration of all aspects of the ILS Program in accordance with MIL-HDBK-502 and MIL-PRF-49506.

Change reference in paragraph 7.1 from MIL-STD-1388-1 to MIL-HDB - 502 and MIL-PRF-49506.

SECTION 3B (DESIGN INTERFACE PLANNING AND REPORTING):
Change MIL-STD-1388-1 and MIL-STD-440 to MIL-HDBK-502 and MIL-PRF-49506.

SECTION 4 (ILS PROGRAM TASKS): Second paragraph, change MIL-STD-1388-1 and 2 Task(s) to MIL-HDBK-502 and MIL-PRF-49506 Tasks(s). Change sentence to read, "Provide a detailed description of plans for the accomplishment of logistics support task(s) and subtask(s) as reflected in the contract.

BLK 08: Government review and approval for content, management approach, and completeness. Allow 45 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 081-001 (A006)

BLK03-SUBTITLE: RCM Requirements

BLK04-AUTHORITY: Planned Maintenance System (PMS) Master System and Subsystem Index (DI-MNTY-80979), Planned Maintenance System (PMS) Failure Modes and Effects Analysis (FMEA) (DI-MNTY-80980), Planned Maintenance System (PMS) Functional Failure Analysis (FFA) (DI-MNTY-80981), Planned Maintenance System (PMS) Functionally Significant Items (FSI) Index (DI-MNTY-80982), Planned Maintenance System (PMS) Additional Functionally Significant Item (FSI) Index Selection Report (DI-MNTY-80983), Planned Maintenance System (PMS) Logic Tree Analysis with Supporting Rationale and Justification (DI-MNTY-80984), Planned Maintenance System (PMS) Servicing and Lubrication Analysis (DI-MNTY-80985), Planned Maintenance System (PMS) Requirement Index (DI-MNTY-80986), Planned Maintenance System (PMS) Procedure Evaluation Sheet (PES) (DI-MNTY-80987), Planned Maintenance System (PMS) Task Definition (DI-MNTY-80988), Planned Maintenance System (PMS) Inactive Equipment Maintenance (IEM) Requirement Analysis (DI-MNTY-80989), Planned Maintenance System (PMS) Reliability Centered Maintenance (RCM) Documentation Control Sheet (DI-MNTY-80990), Planned Maintenance System (PMS) Maintenance Requirement Card (MRC) (DI-MNTY-80991), Planned Maintenance System (PMS) Maintenance Index Page (MIP) (DI-MNTY-80992), Planned Maintenance System (PMS) Quality Assurance Check Sheet (DI-MNTY-80993), Planned Maintenance System (PMS) Functional Block Diagram (DI-MNTY-80994)

BLK05-CONTRACT REF: COR Section 081-4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: The delivery stages for developments using the requirements investigation

process for RCM maintenance methodology is specified below and MIL-P-24534A. All references to MRC shall be changed to MPC:

Deliverable Packages:

1. Phase 1 - Master Systems and Subsystems Index forms, related Functional Block Diagrams.
2. Phase 2 - Functional Failure Analysis Form.
2. Phase 3 - Additional FSI Selection and FSI Index.
3. Phase 4 - FMEA Forms.
3. Phase 5 - Logic Tree Analysis Forms and backup rationale sheets.
3. Phase 6 - Servicing and lubrication Analysis forms.
3. Phase 7 - Maintenance Requirement Index forms.
4. Phase 8 - Procedure Evaluation sheet form.
5. Phase 9 - Task Definition Forms.
5. Phase 10 - Inactive Equipment Maintenance (IEM) Analysis forms and Procedure Evaluation form.
5. Phase 11 - Unscheduled Maintenance documentation.
6. Phase 12 - MIP and MPC documentation and the Documentation Package.

BLK 04: The following changes apply to DID DI-MNTY-80991, Planned Maintenance System (PMS) Maintenance Requirement Card (MRC)

Block 10.1 Change to read: The Contractor shall utilize all Reliability and Supportability analysis information, Manufacturer Maintenance requirements, Manning Study, Technical Publication and Drawings for the development of Maintenance Procedure Cards (MPC).

Block 10.2 Change to read: The Contractor shall record PMS data in accordance with CDRL_081-001_Attachment1.

Block 10.3.6 Delete all references to Navy rates and use the U.S. Coast Guard enlisted qualifications manual.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK12: Analysis documentation delivered shall initially document the pre-product configuration baseline. Subsequent update analysis shall be performed and document configuration changes incorporated into the approved product configuration baseline. Subsequent product configuration baseline documentation delivery is required within 30 days of Government approval of the product configuration baseline. Allow 90 days for Government review.

BLK13: Completion NLT 6 MPTD (30 days for Government review)

ATTACHMENTS:

CDRL_081-001_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-001 (A006)

BLK03-SUBTITLE: Certificate of Identity

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 083-3.19

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 90 DAOE

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 10: For all follow on hulls the Contractor shall supply a Certificate of Identity (COI) signed by the Contractor to verify that all parts of the developed PPL are identical to that previously submitted.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-002 (A006)

BLK03-SUBTITLE: Provisioning Parts List (PPL)

BLK04-AUTHORITY: Logistics Management Information (LMI) Data Product(s) (DI-ALSS-81529)

BLK05-CONTRACT REF: COR Section 083-4.6.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID DI-ALSS-81529 as follows:
Replace 7.3 with: The delivery method is in accordance with contract requirements.
Add to 10.2: The electronic data product provided shall be compatible with the US Navy Interactive Computer-Aided Provisioning (ICAPS) software (version 5.0 or later) data output format.
Replace 10.3 with: The Provisioning Parts List (PPL) shall contain the end item, component or assembly and all support items which can be disassembled, reassembled, or replaced, and which when combined, constitutes the end item, component or assembly and shall include items such as parts, materials, connecting cabling, piping, and fittings required for operation and maintenance of the end item, component, or assembly. The PPL shall be used to determine the range and quantity of support items required to maintain the end item for an initial period of service. This includes all repairable commercial off-the-shelf (COTS) items unless excluded by the provisioning requirements. It does not include a breakdown of government furnished equipment. The PPL shall include items such as parts, materials, connecting cabling, piping, and fittings required for operation and maintenance of the end item/equipment. The PPL shall contain all tools, test equipment, repair parts sets required to maintain the end item, component, or assembly equipment.
For any revisions and/or changes to equipment that has already been

submitted, the Provisioning Activity shall be notified within 21 days of approved revision or change. Changes are a result of data that is added changed or deleted affecting Provisioning Parts Lists (PPL) previously delivered. This change shall be submitted as a revision to the original PCCN. Updates shall be submitted in accordance with/ICAPS user's manual.

Add paragraph 10.5 Data Requirements List – The Provisioning Parts List (PPL) submission shall provide the Data Elements IAW Attachment 1 to this CDRL, the LMI Specification Data for The Provisioning Parts List. The contractor shall provide a top-down sequence number assignment PTD for Provisioning Parts List (PPL).

The Contractor shall provide the following data elements for each end item. These data elements will be obtained from ICAPS and meet MIL-PRF-49506 requirements and forwarded to the PPA for each PTD submission.

BLK08: Approval for format and content. 45 days Government.

BLK12: Submit in accordance with the PTDSS (CDRL 083-005).

ATTACHMENTS:

083-002CDRL_LMI_Attach1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-003 (A006)

BLK03-SUBTITLE: Engineering Data for Provisioning (EDFP)

BLK04-AUTHORITY: Supplemental Data for Provisioning (SDFP) (DI-ALSS-81557)

BLK05-CONTRACT REF: COR Section 083-4.6.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Modify DID as follows:
Delete 7.2.c.
Add:
10.2.1: EDFP is required to be provided for each end item identified in the Provisioning Parts List (PPL), including those end items that are found to have an assigned NSN. In addition, EDFP shall be provided for Design Change Notices (DCN) which are incorporated into any production end item or support item that add, delete, supersede, or modify previously accepted items. Technical Data submitted as EDFP shall be annotated with CAGE Code and PLISN. On Engineering Drawings, the PLISN will be directly above the nomenclature. On Associated Lists, the PLISN will appear next to the item identification. When an Engineering Drawing or Associated List applies to multiple PLISNs, all PLISNs will be annotated on the Engineering Drawing or Associated List. Any Engineering Drawings and Associated List shall be provided in PLISN sequence to be compatible with the PPL. If commercial literature is provided, the CAGE Code and PLISN shall be annotated next to the appropriate manufacturer's part number. The sketch or illustration provided in support of the commercial literature, specification, or standard must also have the PLISN annotated next to the specific item.

10.2.2: If EDFP is contained within a manufacturer or commercial manual

or data product, the minimum data required is that data which is specific to and provides fully definitive identification of the end item.

10.2.3: COMDTINST M4105.8 System Integrated Logistical Support (SILS) Policy applies.

10.2.4: Include digital images of the item that are suitable for incorporating into the IETP content requirements of COR Section 086.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: Concurrent with PPL submissions.

BLK 12: Concurrent with PPL submissions. Allow 45 days for Government review.

ATTACHMENTS:

PPL Data Elements.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-004 (A006)

BLK03-SUBTITLE: Readiness-Based Sparing Recommendations

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 083-4.7

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK16

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK04: Modify the DID as follows:
Replace 2(c)(2) with: Provide a detailed description of analysis performed to derive the recommendations presented in 2(c)(3).
Replace 2(c)(3) with: Provide recommendations for Coast Guard readiness-based sparing allowances needed to support the required Operational Availability for one year, based on the Reliability, Maintainability and Availability, (RM&A)analysis, Maintenance Planning, Coast Guard Maintenance Philosophy for the FRC, and Reliability Center Maintenance (RCM) requirements of COR Section 081.

Replace 2(d) with: Provide recommendations for any Inventory Control Point (ICP) allowances of deep insurance spares (including casualty support items) to support a fleet size equal to the number of FRCs ordered at the time of the report. Provide a detailed description of readiness-based analysis performed and/or the rationale used to derive the recommendations.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 12: Sparing recommendation lists shall be prepared and submitted as required by the Contractor after AEL's/APL's/Outfitting Material has been

identified and after each PTD milestone in accordance with the PTD Submission Schedule.

ATTACHMENTS:

083-004_PPL_Table CDRL.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-005 (A006)

BLK03-SUBTITLE: Provisioning Technical Documentation Submission Schedule. (PTDSS)

BLK04-AUTHORITY: PTD Submission Schedule (PTDSS) (CGDI-ILSS-80501)

BLK05-CONTRACT REF: COR Section 083-4.9

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:** ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: In BLK 05, replace G-APS with CG-936 (G-AWP). Add to 10.1.1:
100% of all PTD is due 12 months before cutter delivery.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-006 (A010)

BLK03-SUBTITLE: Allowance Equipage Lists

BLK04-AUTHORITY: Logistics Management Information (LMI) Data Product(s) (DI-ALSS-81529)

BLK05-CONTRACT REF: COR Section 083-5.2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See Blk 16

BLK13-DATE OF SUBS SUBM: See Blk 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 4: The Contractor shall develop AEL's with input from the Coast Guard during the Detail and Production Phases in accordance with Mil-Std-1339C and COR section 083.

Lists shall be developed utilizing the Government Inter-Active Computer Aided Provisioning (ICAPS) software (Version 5.0 or Later) data output file in accordance with Attachment 1 MIL-PRF-49506 to this CDRL.

AEL data shall be compatible with the Government Real-Time Outfitting Material Information System Material Management System (ROMIS MMS). The contractor is responsible for gaining access to the ROMIS MMS website after Contract Award via the official ROMIS website www.romis.com/romis1.html. The contractor shall be responsible for obtaining the required certifications and user training for access and use of ROMIS MMS.

BLK 8: Review and approval for technical content, accuracy, applicability, and completeness.

BLK 12: Preliminary AEL's shall be delivered to the Coast Guard 30 days prior to Critical Design Review (CDR) for the Lead FRC-B.

BLK 13: Subsequent submissions of AEL's shall be shall be completed
NLT 8 months prior to each cutter delivery.

ATTACHMENTS:

083-006CDRL_LMI_Attach1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-007 (A006)

BLK03-SUBTITLE: Outfitting Operations Plan Parts II and III

BLK04-AUTHORITY: Outfitting Operations Plan (DI-ILSS-80947)

BLK05-CONTRACT REF: COR Section 083-6.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:** AS/REQ'D

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Paragraphs 10.2.1 through 10.1.2 do not apply. The Outfitting Operations Plan Parts II and III shall outline the Process and Procedures that will be used to implement the Outfitting and Spares for the FRC-B.

BLK 08: Government review and approval for technical content, accuracy and completeness. Allow 45 days for Government review.

BLK13: Subsequent submission shall occur NLT 90 DACDR. Allow 30 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-008 (A006)

BLK03-SUBTITLE: Outfitting Material Status Reports

BLK04-AUTHORITY: Outfitting Operations Plan (DI-ILSS-80947)

BLK05-CONTRACT REF: COR Section 083-6.3.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Outfitting Material Status Reports shall be generated for All Outfitting material in accordance with the COR Section 083 and MIL-STD-1339C utilizing the Government Logistics Supply database ROMIS MMS (latest version) Reports shall be created as follows.
Binned Material List and Shipboard Stowage Location List.

BLK 08: Government review and approval of first submission for technical content, completeness, format and clarity.

BLK12: Database shall be made available to the Government 10 MPTD.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-009 (A006)

BLK03-SUBTITLE: Departure Shortage List

BLK04-AUTHORITY: Allowance Shortage Lists (DI-ILSS-80960)

BLK05-CONTRACT REF: COR Section 083-6.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** SEE BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 12: The Departure Shortage List utilizing the Government Logistics Supply database ROMIS MMS (latest version) shall be provided NLT 15 days prior to each FRC-B delivery to the Government.

BLK 13: The Departure Shortage List shall be submitted weekly after vessel delivery until all shortages are resolved.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 083-010 (A006)

BLK03-SUBTITLE: Excess Ship Outfitting Material Report

BLK04-AUTHORITY: Outfitting Material Status Report (DI-ILSS-80948)

BLK05-CONTRACT REF: COR Section 083-6.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: SEE BLK 16

BLK13-DATE OF SUBS SUBM:

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: In DID change all references of "Consolidated Shipboard Allowance List (COSAL)" to the "Government Logistics Supply database ROMIS MMS (latest version)."

BLK 12: Excess Ship Outfitting Material report shall be provided NLT 15 days prior to each FRC-B delivery to the Government.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 084-001 (A006)

BLK03-SUBTITLE: Delivery Plan

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 084-1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK16

BLK13-DATE OF SUBS SUBM: See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
At a minimum, the Delivery Plan shall include:

FRC hull number(s) included in this delivery.
Scheduled date of PAT.
A description of the proposed delivery location.
List of logistics resources (including points of contact and telephone numbers) to be used at the delivery location to support launch, dockside trials and AT.
Plans for transporting the FRC(s) to the proposed delivery location, including scheduled dates of departure and arrival.
Acceptance Trials Plan, including planned date for Post-Transport Inspection, Post-Transport Inspection checklist, date for planned Underway Trials, if different, schedule of events, plan for and location of launch, location of underway trials, and data collection forms.
Any applicable contingency plans.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The Contractor shall submit a Delivery Plan for each planned delivery of an FRC or group of FRCs.

BLK12: First submission is due 30 days prior to the planned delivery. The first submission is considered final unless the Government provides comments within 7 days.

BLK13: Subsequent submissions are due within 7 days of receipt of Government comments. Subsequent submissions are considered final unless the Government provides comments within 7 days.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-001 (A006)

BLK03-SUBTITLE: Drawing Number Assignment Report

BLK04-AUTHORITY: Drawing Number Assignment Report (DI-SESS-81011C)

BLK05-CONTRACT REF: COR Section 085-4.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 60 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

ATTACHMENTS: MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-002 (A006)

BLK03-SUBTITLE: General Arrangement Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS:

1. The following information shall be included in the General Arrangement Drawings in addition to the items shown in Table I:
 - a. Heights above baseline shall be shown by figure dimensions on the outboard profile for the highest obstruction, the top of mast, miscellaneous platforms, navigation and signal lights, Pilot House deck, and top of Pilot House.
 - b. Installations for propulsion equipment, commissary equipment, and furniture shall be delineated only as necessary for clear understanding, using straight line outline and labeling.
 - c. Details of rails, stanchions and rigging, where a clear understanding of the actual installation can be obtained otherwise, need not be shown. Hinging of lifeline stanchions need not be shown.
 - d. Detailed arrangement of spaces shall show use or occupancy. In crew living spaces, the outline of berths, number of crew berthed, number of lockers, or other accommodations provided in each space shall be shown.
 - e. General arrangement of furniture and equipment in officer quarters, crew berthing, office, and similar spaces shall be shown in detail. Berths

shall be marked single or double. Chairs or similar small articles of furniture shall be shown. Messing spaces shall indicate number of crew that can be seated in each space.

2. All compartments shall be designated by compartment number and by name. The following, where applicable, shall be labeled:

- a. Important structural components.
- b. Machinery (propulsion and independent auxiliaries).
- c. Equipment.
- d. Access openings and closures.
- e. Appendages.
- f. Fittings.
- g. Ventilation trunks and major ducts.
- h. Rigging and antennas.
- i. Furniture.
- j. Life rafts and boats, giving length and type.
- k. Stations (such as fire).

3. All deck and profile views shall be to the same scale and shall include horizontal and vertical scales.

4. General Arrangement (Plan views and Profiles) of the vessel shall include the outboard fittings listed in Table I.

TABLE I.

LIST OF ITEMS REQUIRED TO BE INCLUDED IN THE GENERAL ARRANGEMENT DRAWINGS

Air ports and fixed portlights-trace on deck drawings and outboard profile
Anchors
Antennas, radio and radar
Appendages, major, such as struts and bilge keels
Arches in bulkheads
Armament-outline, location, number, size or type
Auxiliary machinery-outline of major units such as steering gear and anchor windlass
Bell, ship
Binnacle-with fixed and movable nonmagnetic material circles
Bits and chocks
Boats, giving length and type
Bulkheads
Bulkheads, fire zone
Bulwarks
Cabins and lounges-outline of transoms, lounge chairs, tables, and lockers
Capstans
Cargo booms, and other weight handling devices
Cargo handling routes
Chain pipes
Chairs, Pilot House
Compartments-all; identification number and use
Compasses
Control space-outline
Cows

Davits (fixed types only)
Deck lines
Docking keels
Doors-location and swing
Ducts, ventilation-plan view, major only
Escape scuttles
Fans, ventilation, major
Fenders
Fire zones
Frame, web-trace on deck drawings
Frame numbers-all drawings, each fifth frame
Fueling stations
Galley-outline of ranges, ovens, mixers, griddles, kettles, and dressers
Generators-outline and number
Gypsy heads
Hatches
Hatchways
Hawsepipes
Kingposts
Ladders
Laundries, outline of washers and dryers
Life buoys
Life rafts
Lights
Living spaces-outline of berths and lockers and number of persons
accommodated in space
Lockers
Magazine-kind of ammunition stored only
Manholes
Masts, spars, booms, and yardarms
Medical space-outline and number of berths, cabinets, lockers, and other
large items
Messing-outline of tables and number of persons that can be seated in
each messing compartment
Motor-outline and number
Offices-outline of desks, large cabinets, lockers, and tables
Power panels, electrical
Propeller lifting padeyes
Propeller-on outboard profile and deck level drawing (with outline showing
maximum beam on deck
level drawing in way of propeller)
Propulsion machinery-outline of diesel engines, gears, and other major
items
Propulsion shafting on outboard profile and deck level drawings
Rails
Ramps
Refrigerated storerooms
Rigging, standing
Rudder
Scuppers
Searchlights
Signal halyard
Stacks
Stanchions
Stiffeners on main structural bulkheads
Storerooms-allocation
Struts, shaft

Switchboard, generator, distribution, and load center
Tanks, potable water, gravity and pressure
Tensioning Winches
Tiedown fittings
Towing and salvage fittings
Trunks-plan view, principal
Ventilators (indicate heights)
Washrooms-list of major fixtures
Water closet spaces-list of major fixtures
Wildcats
Winches-outline and number
Windlass-outline
Windows
Windshields
Work benches

5. Internal arrangements and features of all living, messing, recreation, working and control spaces, and stores and stowage areas shall be depicted. Access for personnel transit, stores strike down, and equipment removal shall be depicted. Firing arcs of any installed/mounted weapon systems shall be depicted.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.
- b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
- d. The metric system shall be used only for those components designed in the metric system.
- e. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- f. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.
- h. Each drawing shall reference all related drawings.
- i. Equipment shall be identified on all drawings by their assigned nomenclature and model or type number designations.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-003 (A006)

BLK03-SUBTITLE: Hydrostatic Analysis

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK05: Hydrostatic Properties Drawings shall include the following as a minimum:

- Curves of Form
- Hydrostatic Tables
- Cross Curves of Stability

Curves of Form are to include but not be limited to: displacement in salt and fresh water, tons per inch immersion, moment to trim 1 inch, change in displacement per inch of trim, Longitudinal Center of Buoyancy (LCB), Longitudinal Center of Flotation (LCF), Vertical Center of Buoyancy (VCB); block, prismatic, waterplane and midship coefficients. The Curves of Form shall be developed for 0 Ft trim and range of drafts from 1.0 Ft to 2 feet above the limiting draft. Drafts shall be measured from bottom of keel. The Curves of Form shall be provided in both AutoCAD format (electronic copy) and hard copy.

Hydrostatic Tables shall list in tabular form hydrostatic values from curves of form for the same range of drafts, with 1 inch draft interval. The tables shall be developed for 0 Ft trim, 1.0 Ft trim by the bow, and 2.0 trim by the stern.

Cross Curves of stability shall be developed for 0 Ft trim and for the

displacements range corresponding to the drafts range required for Curves of Form. The Cross Curves shall be provided in both AutoCAD format (electronic copy) and hard copy.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- b. All abbreviations shall be in accordance with MIL-STD-12.
- c. The metric system shall be used only for those components designed in the metric system.
- d. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- e. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- f. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.
- g. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-004 (A006)

BLK03-SUBTITLE: Docking Plan

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: The Docking Plan shall be in accordance with requirements provided in NSTM S9086-7G-STM-010, Chapter 997-H.4. The Docking Plan shall also include the Weight Distribution.
Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.
a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.
b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall

- be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
 - d. The metric system shall be used only for those components designed in the metric system.
 - e. Lettering and line conventions shall be in accordance with ANSI Y14.2.
 - f. Dimensions and tolerances shall be in accordance with ASME Y14.5.
 - g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.
 - h. Each drawing shall reference all related drawings.
 - i. Equipment shall be identified on all drawings by their assigned nomenclature and model or type number designations.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-005 (A006)

BLK03-SUBTITLE: Selected Record Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-8.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: ELC-024 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: One time upon delivery of last vessel of class.

BLK 13: Subsequent submissions to be submitted as revisions occur to the
class.

BLK 14: Hard Copy drawings shall be full size.

ATTACHMENTS: MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-006 (A006)

BLK03-SUBTITLE: List of Lubricants and Consumption Chart

BLK04-AUTHORITY: Design Data and Calculations (DI-GDRQ-80650)

BLK05-CONTRACT REF: COR Sections 085-10.1.1 and 540-1.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 90 Days Prior to BT

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK04: Modify DID as follows:
Paragraphs 10.1 and only 10.2.D of paragraph 10.2 apply. Replace paragraph 10.3 with: From the results of the RCM Analysis required in COR Section 081, submit a chart, in contractor's format, of various machinery and lubricants including the projected annual usage rate for each lubricant.

The report shall be generated from a Master Lubricant Table database developed by the contractor, and shall be assigned a drawing number. The database, with report generator, shall be delivered with the cutter. The database and report shall identify equipment or system, lubricants, quantities used, and stowed on the cutter. The report shall have primary sort on lubricant, and secondary sort on ship system.

Usage rate shall be consistent with endurance requirements and mission profile of COR Section 070.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-007 (A006)

BLK03-SUBTITLE: 3D Technical Data Package

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-11.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK16

BLK13-DATE OF SUBS SUBM: See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: ELC-024 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One time, with revisions. The deliverable shall be divided into several phases to correspond with the requirements of Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. Revisions to the approved deliverable may be submitted as one deliverable.

BLK12: Initial submissions for each phase are due in accordance with the Contractor-developed design review plan required by Section 068 and documented in the Integrated Master Schedule.

BLK13: Subsequent submissions will be due 15 DARC.

BLK 14: Source file shall be provided in hard copy format (e.g., CD, DVD).

ATTACHMENTS: CDRL_085-007_Attachment.doc, MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-008 (A006)

BLK03-SUBTITLE: 2D Product Drawings and Associated Lists

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-12.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK16

BLK13-DATE OF SUBS SUBM: See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK04: DID tailored per TDP Options Worksheet attached to this CDRL.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: Three times, with revisions.
One deliverable shall be in conjunction with the Critical Design Review. The deliverable shall be divided into several phases to correspond with the requirements of COR 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. Revisions to approved phases of the deliverable may be submitted as one deliverable.
One deliverable shall be in conjunction with the first PCA described in COR 041. One deliverable shall be in conjunction with the second PCA described in COR 041.

BLK12: Initial submissions for each phase of the first deliverable are due in accordance with the Contractor-developed design review plan required by COR 068 and documented in the Integrated Master Schedule.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set

of drawings for the PCA is in addition to the copies required for the PRO.

ATTACHMENTS:

CDRL_085-008_Attachment.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-009 (A006)

BLK03-SUBTITLE: Master Equipment Configuration List (MECL/MEL)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 085-13.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: QRTLY

BLK12-DATE OF 1ST SUBM: See BLK16

BLK13-DATE OF SUBS SUBM: See BLK16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID as follows:
Replace paragraph 1 with:
1. Format. The MECL shall be a report generated from the Configuration Status Accounting System (COR Section 041) in general database or spreadsheet format. The file name shall clearly identify the version of the report, including configuration baseline and revision and/or hull number when applicable.

Replace paragraph 2 with:
2. Content. The MECL shall contain an entry for each CILRU with its associated data. A sample MECL report that may be useful in formatting the MECL is provided as an attachment. A sample hierarchical configuration tree that may be useful in determining the level of granularity for a CILRU is provided as two attachments, one indexed by CIFD and one indexed by ESWBS.

Delete 2(d).

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One time, with revisions. The deliverable shall be divided into

several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. Revisions to the approved deliverable may be submitted as one deliverable.

BLK12: Initial submission is due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule. Allow 15 days Government review.

BLK13: Subsequent submissions (post CDR), including revisions, will be due in conjunction with quarterly progress reviews. Allow 15 days Government review on the subsequent submission.

ATTACHMENTS:

CDRL_085-005_Sample_CIFD_ESWBS_XREF.xls, CDRL_085-005_Sample_ESWBS_CIFD_XREF.xls

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-011 (A006)

BLK03-SUBTITLE: Fuel Endurance Calculations

BLK04-AUTHORITY: Design Data and Calculations (DI-GDRQ-80650)

BLK05-CONTRACT REF: COR Sections 070-2.1 (Table 70-1), and 085-9.2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK05: Fuel Endurance Calculations shall be performed as required by COR Section 070-2.1 Table 70-1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: Four times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions or updated information cause a change in the powering requirements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be provided as part of Preliminary Design at least 30 days prior to propulsion equipment selection.

One deliverable shall be provided as part of Contract Design and shall reflect the latest available cutter displacement and powering requirements at the time of Critical Design Review.

One deliverable shall be provided as part of Detail Design and shall reflect the latest available cutter displacement and powering requirements.

The final deliverable shall reflect the as delivered configuration of the cutter after Builder's Trials.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule. Allow 30 days CG review on the Preliminary Design Review.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review. Allow 30 days CG review on the Critical Design Review deliverable.

Submission of final analysis: Analysis is to be provided per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-012 (A006)

BLK03-SUBTITLE: Seakeeping Analyses

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Sections 079-6.2 and 085-9.2.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK5: The Seakeeping Analysis shall quantify seakeeping characteristics and verify the cutter's capability to comply with the limiting criteria of COR Section 079. The analysis shall include seakeeping performance indices and polar plots which apply the seakeeping limits for loiter, transit, boat launch and recovery as stated in the COR Section 079. The contractor shall perform Seakeeping Analysis using a frequency domain, linear strip theory seakeeping analysis program that has been verified against full scale or model test data of the parent craft. Results of the verification shall be included in a report. The report shall include all assumptions, analytical approach, data input and output, polar plots and data summary.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The submissions shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each submission will be treated independently. Revisions to an approved calculation may be submitted as one deliverable.

BLK12: Initial submission is due in accordance with the Contractor-developed design review plan required by COR Section 068 and

documented in the Integrated Master Schedule. Allow 30 days for Government review on the initial submission.

BLK13: Subsequent submissions will be due 15 DARC.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-013 (A006)

BLK03-SUBTITLE: Intact and Damage Stability Analysis

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Sections 079-3.1.1 and 085-9.2.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK 5: The Intact and Damage Stability Analysis shall show compliance with the COR and present the following: assumptions/conditions and standards on which stability analyses are based, including: design criteria for intact and damage conditions, margin line description, details of the load conditions analyzed, details of intact stability analyses, details of damage stability analyses including, identification of flooded compartment combinations, identification of critical cases of damage. Results shall include: limiting KG curve over the range of operating conditions, compared to actual KG, discussion of results of the use and design, if any, of cross-connection tanks, discussion of impact of anti-rolling tanks, if any, on initial and final stability after damage

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The submissions shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each submission will be treated independently. Revisions to an approved calculation may be submitted as one deliverable.

BLK12: Initial submission is due in accordance with the Contractor-

developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule. Allow 30 days for Government review on the initial submission.

BLK13: Subsequent submissions will be due 15 DARC.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-014 (A006)

BLK03-SUBTITLE: Design and Construction Weight Estimate (DCWE)

BLK04-AUTHORITY: Mass Properties Data Report (Surface Ships) (DI-MISC-81357)

BLK05-CONTRACT REF: COR Sections 085-9.2.4 and 096-1.14

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
Replace all references to MIL-STD-2137A with Society of Allied Weight Engineers, Recommended Practices 12, Weight Control Technical Requirements for Surface Ships - SAWE-RP12 (2002).

Replace 10.2 with: Format. Contractors format, appropriate for the presentation of the data required by SAWE-RP12.

Replace 10.3 with: Content. The content for the report shall be as specified in Sections 4 (as modified, see note following), 5.1 through 5.1.2.3, 5.1.2.9, 5.3, 5.3.1, 5.3.1.1, 5.3.1.5, 5.3.2 through 5.3.2.2, 5.3.4.2, 5.3.4.3, 5.3.4.4, and 5.3.4.5 of SAWE-RP12. Note: In paragraph 4.2.6, delete the sentence 'Transverse ... starboard.' and insert the sentence 'Transverse levers port of centerline shall be indicated by 'p' or '-', and starboard of centerline shall be indicated by 's' or '+'.'

ATTACHMENTS: MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-015 (A006)

BLK03-SUBTITLE: Speed-Power Analysis

BLK04-AUTHORITY: Design Data and Calculations (DI-GDRQ-80650)

BLK05-CONTRACT REF: COR Sections 085-9.2.5 and 200-1.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK05:
1. Speed Power Analysis shall be performed as required by COR Section 200-1.5 and the following supporting sections of the COR: 070-2.1 (Operational Speed Requirements), 200-1.4 (Powering Margins and Calculation Methodology), 233-1.4 (Engine Rating Conditions), 233-2.1 (Engine Rating Requirement), and 235-3.1 (Electric Drive Loiter System Sizing).
2. As part of Speed Power Analysis, provide the following technical information to demonstrate appropriate matching of prime movers:
a. Minimum engine room starting temperatures, conditions, and mitigating hardware or procedures.
b. EPA and/or MARPOL Annex VI exhaust emission ratings.
c. Complete description of diesel engine selected including model number, and available and recommend options.
d. Engine fuel map as a function of rpm with specific fuel consumption curves, turbocharger surge line limits, torque limits, power limits, power rating curves, and anticipated propeller loading curve.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be with the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-020 (A006)

BLK03-SUBTITLE: Hull Lines and Offsets Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK05: Hull Lines & Offsets Drawings shall include the following as a minimum:

- Hull Lines
- Offsets
- Rudder & Appendages

The Contractor shall develop the lines and lines drawing with offsets, rudder and appendages. The lines shall be completely faired. A drawing shall be prepared showing faired lines at 20 equally spaced stations, plus half, quarter, and other stations as necessary to adequately delineate the hull form at the bow and stern. The number of stations shall not exceed 40. Lines of contours, decks, and knuckles shall be shown. Lines Plan shall be drawn in as large a scale as practical, but not less than ¼ inch to the foot. All stations, frames, waterlines, buttocks and any other reference lines are to be clearly identified. The contractor shall prepare a table of offsets containing dimensions for half-breadths and heights defining the shape of every station, profile, chine, deck edge and knuckle. Deck camber shall be identified and defined. Control surface and appendage drawings shall be prepared showing sizes and locations of control surfaces and appendages such as struts, propellers, shaft angles, rudders, skegs, fins, thruster tunnels, and bilge keels.

Drawings shall be developed in AutoCAD 2005, or later version of

AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- b. All abbreviations shall be in accordance with MIL-STD-12.
- c. The metric system shall be used only for those components designed in the metric system.
- d. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- e. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- f. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.
- g. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK 14: Cutter requires only Final Drawings.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-021 (A006)

BLK03-SUBTITLE: Welding and Fabrication Procedures and Sequences

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 04: Submission shall include:
Welding Design Criteria establishing controls on selection of weld types consistent with materials, local stresses, and exposure to water or weather.

Welding Process Design Criteria establishing controls on welding electrodes, bare filler wire, flux cored wire, and wire-gas combinations acceptable for the base material; position to be employed; current, polarity, and electrode size.

Standard Welding Detail Booklet containing typical welding symbols identified by a structural joint numbering system in accordance with MIL-STD-0022, Military Standard Welded Joint Design. Welding details identifying the welding process, joint designation, base metal thickness, groove or joint preparation, permitted welding positions and notes.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-022 (A006)

BLK03-SUBTITLE: Drawings of Jigs and Fixtures

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCCR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: Drawings showing all Jigs and Fixtures used during the construction phase shall be provided. Drawings will show all construction details of each Jig and Fixture.
Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade.
- b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
- d. The metric system shall be used only for those components designed in

the metric system.

e. Lettering and line conventions shall be in accordance with ANSI Y14.2.

f. Dimensions and tolerances shall be in accordance with ASME Y14.5.

g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

h. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-100 (A006)

BLK03-SUBTITLE: Structural Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.7

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK04: Structural Drawings shall include the following as a minimum:
- Midship Section
- Hull Structural Scantling Drawings and Details
- Layup Schedule(s) FRP Construction (if applicable)
- Transverse Web Frames
- Transverse Bulkheads
- Main Deck Plating and Supports
- Platform Deck Plating and Supports
- Superstructure Scantlings and Details
The Structural Scantling Drawings shall identify dimensions for plate and/or laminate panels and framing for the hull, superstructure, and all decks, flats, casings, bulkheads, girders, stringers and stanchions throughout the hull and superstructure. The engineering approach for determining stress concentrations and compensation or reinforcement of structural openings shall be provided. Provide as structural drawings to fully depict the hull, superstructure, and decks scantlings and framing arrangements.
Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file

and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.
- b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
- d. The metric system shall be used only for those components designed in the metric system.
- e. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- f. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.
- h. Each drawing shall reference all related drawings.
- i. Equipment shall be identified on all drawings by their assigned nomenclature and model or type number designations.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK 14: Cutter requires only Final Drawings.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-101 (A006)

BLK03-SUBTITLE: Misc. Structural Details Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.8

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK05: Structural Details Drawings shall include the following as a minimum:
- Foundations (Engines, deck machinery, 25mm gun, SWBD, Equipment over 100 lbs.)
- Struts and Stern Tubes Support Structures
- Seachests and Transducer Wells
- Mast(s) Structure and Details
Structure shall be designed to meet the respective sections of the COR and the regulatory requirements. Drawings will show all construction details of each structural system.
Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.
a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or

Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.

b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.

c. All abbreviations shall be in accordance with MIL-STD-12.

d. The metric system shall be used only for those components designed in the metric system.

e. Lettering and line conventions shall be in accordance with ANSI Y14.2.

f. Dimensions and tolerances shall be in accordance with ASME Y14.5.

g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

h. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK 14: Cutter requires only Final Drawings.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-102 (A006)

BLK03-SUBTITLE: Schedule of Door, Manholes and Hatches

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.9

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCCR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK04: Detailed drawings shall include the following as a minimum:
- Doors
- Manholes
- Hatches
The Doors, Manholes and Hatches Schedules shall be designed to meet the respective sections of the COR and the regulatory requirements. Drawings will show all construction details of each item.
Interference control: Interference control drawings, overlay drawings or composite drawings, or computerized interference-elimination systems shall be used to assist in eliminating sources of shipboard physical interferences by coordinating access openings, maintenance clearances, arrangement of furniture, equipment, stowage, and fixtures, with the ventilation, piping, wiring, and other systems.

Final ship construction drawings: Final ship construction drawings shall be complete in detail and scope. For example, sketches that may have been issued in lieu of drawing revisions shall be incorporated on the drawings. Internal arrangements and features of all living, messing, recreation, working and control spaces, and stores and stowage areas shall be depicted in way of doors, hatches and manholes. Access for personnel transit, stores strike down, and equipment removal shall be depicted. Unless otherwise specified, drawings submitted for review or approval

shall be sufficiently complete to ensure that the drawings conform to the contractual requirements, including compatibility with other ship systems; and maintenance and repair accessibility is provided and indicated. Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.
- b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
- d. The metric system shall be used only for those components designed in the metric system.
- e. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- f. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-110 (A006)

BLK03-SUBTITLE: Hull Structure Load and Strength Analysis

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Section 085-9.2.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK05: The Hull Structure Load and Strength Analysis shall include the following as a minimum:
Longitudinal Strength and Analysis of the hull and superstructure structural scantlings and arrangements
- Finite Element Analysis(es)
- Structural Fatigue Life Analysis
- Mast Vibration and Structural Analysis
- Miscellaneous Structural Analyses and
- Key Structural Foundations (e.g. Engine girders, 25mm gun)

The hull girder longitudinal strength and local structural scantling calculations shall be prepared to demonstrate compliance with the requirements of ABS HSNC and the COR. The hull girder loading and section property calculations shall be provided for the longitudinal strength analysis. Longitudinal weight, shear, bending moment, and stress distributions shall be provided for lightship, min-op, full load and full load EOSL in still water, hogging and sagging bending moments.

All hull and superstructure scantling calculations shall be provided in accordance with ABS HSNC rules. Provide specific design criteria and calculations for structures and loads not specifically addressed by ABS

HSNC rules. The engineering approach for determining stress concentrations and compensation or reinforcement of structural openings shall be provided. For FRP construction also provide analysis supporting material lay-up schedules for all laminates, framing, and details used.

Fine mesh Finite Element Analysis (FEA) using NASTRAN or equal of local structure shall be performed for critical locations as determined and as required by ABS Dynamic Load Analysis (DLA) review. Hull structural loads and analyses shall be in accordance with ABS HSNC rules and DLA. Analyses shall cover all aspects and details of the plate and/or laminate panels and framing for the hull, superstructure, and all decks, flats, casings, bulkheads, girders, stringers and stanchions throughout the hull and superstructure. Analyses shall be based on long-term North Pacific Ocean wave statistics and spectral shapes, and the specified operating profiles and heading probabilities in the COR and ABS HSNC requirements. The report shall include the potential for bottom and bow flare slamming shall be evaluated and its effects included. The dynamic loads shall be based on the ship's extreme long-term response. In addition to hull girder bending moments and shear forces, external hydrodynamic pressures on the hull, internal tank pressures, and inertial loads of the hull structure shall be included in the analyses. Maximum stress results shall be compared to material allowable stress levels and buckling criteria as a means of assessing structural adequacy. This FEA shall be updated and used for a vibration analysis to identify global and local modes of vibration in accordance with the requirements of COR Section 073.

The Fatigue Analysis shall be documented in a report to demonstrate compliance with the COR. The report shall include the following:

1. Description of the problem. Description of the engineering model. A general description of the superstructure and hull structure and detailed description of the structure being analyzed. Pertinent ship characteristics, all ship loading conditions examined; including total displacement and corresponding drafts for each loading condition shall be provided. Include weight distribution for each displacement. All wave and sea state parameters used to generate the ship motion and wave-induced bending moment data used in the fatigue analysis in accordance with the COR. Expected operational areas, heading angles and operational hours per year. Where the data differs from, or is not mentioned in, the specification, justification shall be provided for the particular data used. All global and local loads shall be clearly listed and, where applicable, summed using appropriate probability and phase factors. These factors shall be specified in accordance with the current Navy practice or, if unavailable, with ABS practices, or if neither is available, justifications shall be provided for selecting their particular values. Hydrodynamic and hull loading analysis including bending moment RAOs at all speeds and headings considered. Approach used to estimate the hull girder whipping induced stresses and their combination with wave bending induces stress. Identification of fatigue categories of all weld seams in question. Fatigue categories shall be assigned based on the weld location, its orientation relative to the prevailing stress direction, its extent and proximity to other details involved, using the "Fatigue Design Guidance for Surface Ships", AASHTO Standard Specification for Highway Bridges, 1992, as well as ABS SVR 5-1-A1 "Guide for Fatigue Strength Assessment of Tankers" (or similar SVR 5-3-A1; or 5-5-A1) with appropriate adjustments of S-N curves groupings. Special attention shall be paid to such welds that are in a plane stress state when stresses in both directions are closely comparable.

2. Type of analysis being performed. System of units. Coordinate axis system. Description of the FEA and other models. Plots of the full FEA model and local details. The report shall include all relevant finite element (FE) plots with the scales and all accompanying information given or referred to in the legend. When a color plot and its scale are given in the terms of fatigue life, the upper scale limit shall be at least three times greater than the required ship life (e.g. for a 30 year life required, the highest life shown in the scale shall be at least 90 years). Element types and degrees of freedom per node. Material properties. Element properties. FE loads and boundary conditions. All stress components (primary, secondary, and tertiary), where applicable, shall be taken into consideration. When finite element model (FEM) analysis is used for determining the stresses, the mesh size shall be commensurate to the detail in question and to the area of the applicable stress components.

3. Description and presentation of the results. Fatigue criteria shall be discussed, i.e. what is the basis behind the service life calculated. Every critical detail shall meet a fatigue life of at least 25 years. Stress histograms of stress magnitude and number of cycles for each detail considered. Fatigue strength (life) shall be assessed for those local structures and details, which are located in critical areas and subject to high loads, high stresses, and high stress concentrations. They include, but are not limited to, all openings and any local welded attachments situated in the shear strakes, stringer stakes of the Main and O1 levels, and bilges; superstructure reentrance areas, clusters of openings, closely-spaced openings, low-radius corners of deck and longitudinal bulkhead openings located considerably far from the neutral axis, and other potentially fatigue-sensitive locations. Stress concentration factors shall be presented in accordance with the "Fatigue Design Guidance for Surface Ships", or ABS SVR 5-1-A1 "Guide for Fatigue Strength Assessment of Tankers" (or similar SVR 5-3-A1; or 5-5-A1) and applied to the total stress. When FEM analysis is used for determining the stresses, stress concentration factors shall either be calculated as mentioned above or the total stress at the point in question shall be determined directly by FEM using a mesh size finer than the lowest plate thickness or weld size (catet), whichever is lesser, in the area of the detail in question.

4. Assessment of the accuracy of the FEA results. Any programs used for fatigue analysis and its components (e.g., motions, loads, FEM) shall be either routinely used or certified by the Navy or ABS. Otherwise a detailed description and comparative calculations shall be provided to validate the program. A discussion of engineering model, finite element model checks, and finite element results checks shall be included. Conclusions of the analysis shall include a discussion of the modeling results and acceptance criteria, load assessment, strength/resistance assessment, accuracy assessment and overall assessment. Provide a list of references. Include drawings numbers and revision level and where the information was used in the analysis.

The mast structure and foundation report shall document the complete analysis from loads development, analysis and assumptions, compliance with limiting stress and deflections, and vibration modes in accordance with the COR. The report shall document the requirements, type of analysis being performed, system of units, coordinate axis system, description of the computer program or FEA and other models, plots of the full FEA model and local details. The report shall include all relevant FE

plots with the scales and all accompanying information given or referred to in the legend, element types and degrees of freedom per node, material properties, element properties, FE loads and boundary conditions, all stress components (primary, secondary, and tertiary), where applicable, shall be taken into consideration. When FEM analysis is used for determining the stresses, the mesh size shall be commensurate to the detail in question and to the area of the applicable stress components. A discussion of the modeling results and acceptance criteria, load assessment, strength/resistance assessment, accuracy assessment and overall assessment shall be included. Provide a list of references. Include drawings numbers and revision level and where the information was used in the analysis.

Miscellaneous Structural Analyses and Key Structural Foundations (e.g., engine girders, 25mm gun foundation) report shall document the complete analysis from loads development, analysis and assumptions, compliance with limiting stress and deflections in accordance with the COR. The report shall document the requirements, type of analysis being performed, system of units, coordinate axis system, description of the computer analysis or FEA and other models, plots of the full FEA model and local details. The report shall include all relevant FE plots with the scales and all accompanying information given or referred to in the legend, element types and degrees of freedom per node, material properties, element properties, FE loads and boundary conditions, all stress components (primary, secondary, and tertiary), where applicable, shall be taken into consideration. When FEM analysis is used for determining the stresses, the mesh size shall be commensurate to the detail in question and to the area of the applicable stress components. A discussion of the modeling results and acceptance criteria, load assessment, strength/resistance assessment, accuracy assessment and overall assessment shall be included. Provide a list of references. Include drawings numbers and revision level and where the information was used in the analysis. Electronic FEA models developed as part of the analysis shall be delivered with the reports.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The submissions shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each submission will be treated independently. Revisions to an approved calculation may be submitted as one deliverable.

BLK12: Initial submission is due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule. Allow 30 days Government review on all submissions.

BLK13: Subsequent submissions will be due 30 DARC.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-200 (A006)

BLK03-SUBTITLE: Main and Auxiliary Machinery Arrangement Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.10 and 233-1.1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf , CDRL_085-200_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-201 (A006)

BLK03-SUBTITLE: Propulsion Control, Monitoring, and Remote Shutdown Diagram

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.11 and 202

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-201_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-202 (A006)

BLK03-SUBTITLE: Main Propulsion Shafting Arrangement and Details

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.12 and 243-2.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS:

BLK4: Drawings shall be prepared in accordance with attachment 1.

BLK10: Three times, with revisions.
The revision requires re-submittal and approval.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review

One deliverable shall be the Final Drawings.

BLK12: Initial submission is due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule. Allow 30 days CG review on the preliminary submittal.

BLK13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set

of drawings for the PCA is in addition to the copies required for the PRO.
Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf , CDRL_085-202_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-203 (A006)

BLK03-SUBTITLE: Propeller or Water Jet Plans and Data

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.13 and 245-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS:

BLK04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: Three times, with revisions.
The revision requires re-submittal and approval.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review

One deliverable shall be the Final Drawings.

BLK12: Initial submission is due in accordance with the Contractor-developed design review plan required by COR 068 and documented in the Integrated Master Schedule. Allow 30 days CG review on the preliminary submittal.

BLK13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials

and prior to Preliminary Acceptance Trials.

BLK14: Hard Copy drawings shall be full size. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf, CDRL_085-203_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-204 (A006)

BLK03-SUBTITLE: Maintenance Removal Plans and/or Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 071-8 and 085-5.19

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK04: Maintenance Removal Plans and/or Drawings shall be developed as required by COR Section 071 for the following:
Main engines.
Reduction gears
Propellers (if provided)
Waterjets (if provided)
Propulsion Shafts
Rudders (if provided)
Pumps, Fans, Compressors and Motors (over 15hp)
Fin stabilizers (if fitted)
Generators.
Thrusters (if provided)
Auxiliary (Loiter) Drives (if provided)
Davits (if provided)

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated

independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf , CDRL_085-204_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-210 (A006)

BLK03-SUBTITLE: Propulsion Analysis and Calculations

BLK04-AUTHORITY: Design Data and Calculations (DI-GDRQ-80650)

BLK05-CONTRACT REF: COR Sections 085-9.2.7.3, 233-1.3, 242-1.1, 243-2.1 and 243-4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 90 DPCDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Separate analyses shall be submitted in accordance with attachment 1.

BLK10: A revision shall be provided if design decisions or updated information cause a change in the shafting analysis results. The revision requires re-submittal and approval.

ATTACHMENTS: CDRL_085-210_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-300 (A006)

BLK03-SUBTITLE: Electrical One Line Diagram

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.14 and 300-2.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-300_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-301 (A006)

BLK03-SUBTITLE: Electrical Power Distribution Deck Plans

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.15

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-301_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-302 (A006)

BLK03-SUBTITLE: Generator and Switchboard Drawing

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.16

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-302_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-303 (A006)

BLK03-SUBTITLE: Lighting System Deck Plans and Control Details

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.3.17 and 300-2.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-303_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-304 (A006)

BLK03-SUBTITLE: Alarm System Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.18, 252, and 436

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Ship Construction Drawings shall be developed as required by COR Section 252, 436, ABS HSNC 4-9-4 and the detailed listing of COR Section 085.

Drawings shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-304_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-310 (A006)

BLK03-SUBTITLE: Cathodic Protection System Calculations

BLK04-AUTHORITY: Developmental Design Drawings/Models and Associated Lists (DI-SESS-81002D)

BLK05-CONTRACT REF: COR Sections 085-9.2.11 and 633

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK 04: Calculations shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-310_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-311 (A006)

BLK03-SUBTITLE: Lighting Calculations

BLK04-AUTHORITY: Developmental Design Drawings/Models and Associated Lists (DI-SESS-81002D)

BLK05-CONTRACT REF: COR Sections 085-9.2.12 and 330-1.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Calculations shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-311_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-312 (A006)

BLK03-SUBTITLE: Preliminary Electric Plant Load Analysis (pEPLA)

BLK04-AUTHORITY: Design Data and Calculations (DI-GDRQ-80650)

BLK05-CONTRACT REF: COR Section 085-9.2.13 and 300-2.4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 60 DAC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Calculations shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS: CDRL_085-312_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-313 (A006)

BLK03-SUBTITLE: Electrical Plant Load and Power Analysis (EPLA)

BLK04-AUTHORITY: Developmental Design Drawings/Models and Associated Lists (DI-SESS-81002D)

BLK05-CONTRACT REF: COR Sections 085-9.2.14 and 300-2.4.2 through 2.4.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: The following analyses shall be prepared in accordance with Attachments 1 thru 6:

Electric Plant Load Analysis, Attachment 1
Electric Cable Voltage Drop Calculations, Attachment 2
Fault Current Analysis, Attachment 3
Protective Device Coordination Study, Attachment 4
Maximum Transient Voltage Dip Calculations, Attachment 5
Electrical Harmonic Analysis, Attachment 6

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-313_Attachment1.doc, CDRL_085-313_Attachment2.doc, CDRL_085-313_Attachment3.doc, CDRL_085-313_Attachment4.doc, CDRL_085-313_Attachment5.doc, CDRL_085-313_Attachment6.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-314 (A006)

BLK03-SUBTITLE: Failure Modes and Effects Analysis (FMEA)

BLK04-AUTHORITY: Developmental Design Drawings/Models and Associated Lists (DI-SESS-81002D)

BLK05-CONTRACT REF: COR Sections 085-9.2.15 and 300-2.4.8

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK 04: Calculations shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days.
The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-314_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-315 (A006)

BLK03-SUBTITLE: Battery Calculations

BLK04-AUTHORITY: Developmental Design Drawings/Models and Associated Lists (DI-SESS-81002D)

BLK05-CONTRACT REF: COR Sections 085-9 and 313-3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Calculations shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days.
The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-315_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-400 (A006)

BLK03-SUBTITLE: Command and Control Arrangements

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.19 and 401

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-400_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-401 (A006)

BLK03-SUBTITLE: Antennae Arrangement and Installation

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.20 and 405

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-401_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-402 (A006)

BLK03-SUBTITLE: Electrical Navigation Aids

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.21 and 422

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-402_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-403 (A006)

BLK03-SUBTITLE: Electronic Navigation Systems

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.22 and 423

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-403_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-404 (A006)

BLK03-SUBTITLE: Communication Systems, Schematics and Wiring Diagrams

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.23, 430, 432,433, and 434

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be developed as required by COR Sections 430, 432, 433, 434 and the detailed listing of COR Section 085-5.

Drawings shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-404_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-405 (A006)

BLK03-SUBTITLE: C4ISR System Block Diagram, Schematics and Wiring Diagrams

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.3.24, 425, 440, 451, 455 and 457

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with Attachment 1.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

Updates shall be submitted no less frequently than quarterly.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 35 days before the scheduled Critical Design Review.

Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials.

BLKs 10, 12, and 13: Government will provide comments within 30 days. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-405_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-410 (A006)

BLK03-SUBTITLE: Digital Data Signal Summary and System Capacity Calculations

BLK04-AUTHORITY: Design Data and Calculations (DI-GDRQ-80650)

BLK05-CONTRACT REF: COR Sections 085-9.2.16 and 413-1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK 04: Calculations shall be prepared per COR Section 413 and in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 30 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days.
The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-410_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-500 (A006)

BLK03-SUBTITLE: Piping and Mechanical System Diagrams

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sec. 085-5.3.25, 233, 502, 506, 512, 521, 528, 529, 533, 540, 541, 551, 555, 556, 561, and 593

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with the Attachments below.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS: MIL-DTL-31000C.pdf , CDRL_085-500_Attachment1.doc, CDRL_085-500_Attachment2.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-501 (A006)

BLK03-SUBTITLE: Machinery System Arrangement Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with the Attachments below.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC. Final Drawings are due at cutter delivery.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS: MIL-DTL-31000C.pdf, CDRL_085-501_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-502 (A006)

BLK03-SUBTITLE: Hose Log

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Sections 085-5.5 and 505-2.3.9

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPAT

**BLK13-DATE OF SUBS
SUBM:** 15 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
1. Format - USCG Automated Flexible Hose Program (Microsoft Office ^tm Access) Database in accordance with COMDTINST M9000.6E. Program supplied by ELC025.
2. Content - The Hose Log shall include the following information for each hose:

- Normally Fixed Information

(1) Hose Serial number/Tag Number
(2) System and Associated Assembly
(3) Compartment number
(4) Hose Length
(5) Hose Size
(6) Ship Division responsible for item
(7) Maintenance Procedure Card (MPC) number
(8) MPC inspection periodicity
(9) Part Number
(10) NSN
(11) Construction Type
(12) Design Pressure
(13) Hydrostatic Test Pressure

(14) Periodicity of Replacement; see COMDTINST M9000.6E Chapter 505.

(15) ESWBS

(16) Drawing Reference number

(17) Tech Pub Reference number

(18) Remarks

(19) Special Notes or Instruction

- Variable information:

(20) Source of Supply

(21) Hose Manufacturer

(22) Hose Fabricated by

(23) Inlet Fitting Description & Part Number

(24) Outlet Fitting Description & Part Number

(25) Fabrication Date

(26) Hydro Test Date

(27) Installation Date

(28) Inspection Date (when last MPC inspection occurred)

BLK08: The submittal for the first FRC-B requires approval. Government review and approval for technical content, completeness, format and clarity. Submittals for the remaining FRC-Bs do not require approval.

BLK10: A Hose Log shall be supplied with each FRC-B.

BLK14: Each FRC-B shall receive an electronic copy and a hard copy of the USCG Automated Flexible Hose Program on a Compact Disk labeled with Title, Hull Number and Date of delivery.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-503 (A006)

BLK03-SUBTITLE: Propulsion System, Ship Service Diesel Generator, Emergency Diesel Generator Installation Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.6 and 200-1.9

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachments.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK 14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf, CDRL_085-503_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-504 (A006)

BLK03-SUBTITLE: Miscellaneous Tanks Drawing

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.7

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachments.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-504_Attachment1.doc, MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-505 (A006)

BLK03-SUBTITLE: Portable Fire Extinguishers Arrangement Drawing

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.8 and 555-2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with the Attachments below.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-505_Attachment1.doc, MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-506 (A006)

BLK03-SUBTITLE: Anchoring, Mooring and Towing Arrangements

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.9, 581-1.1 and 582

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1, CG-9361 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: Arrangements and Details of Anchoring system, Mooring layout including bits, chocks, etc., and Towing arrangement including towing bitt and associated fairleads. Drawings shall depict arrangement of equipment and fittings associated with each system (anchoring, mooring, and towing) with details for fabrication and/or installation as required to fully detail the systems.

The Anchoring arrangement and details drawing meeting the requirements of the COR shall depict if provided; anchor(s), stowage, hawser pipe(s), chain stoppers, winch/capstan, striker plate, and associated equipment. Information regarding the anchoring system shall be sufficiently detailed to allow either a computer 3D simulation of the anchoring evolution to be built or a physical operating scale model to be built.

A drawing showing Mooring arrangements and details meeting the requirements of the COR and depicting all fittings shall be provided. The arrangement shall indicate the FRC-B breasted in a fixed mooring under the environmental conditions stated in the COR. Details related to hawser type(s) and size(s), stowage locations and reels shall be included on the drawing.

A Towing arrangement and details drawing meeting the requirements of

the COR shall be provided. The drawing shall depict the arrangement for towing using the primary hawser and showing all fittings, and supporting equipment arrangements including towing bitt, taff rail, and/or chock as provided. Details for fabrication and installation of bits, chocks and/or taff rail shall be provided.

BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-507 (A006)

BLK03-SUBTITLE: Instrument and Gauge Calibration Report

BLK04-AUTHORITY: Technical Information Report (DI-MISC-80652)

BLK05-CONTRACT REF: COR Section 504-5.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: 2TIME

**BLK12-DATE OF 1ST
SUBM:** BT

**BLK13-DATE OF SUBS
SUBM:** 10 DPCDD

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1, CUTTER 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 04: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, 10.3.2, and 10.5 apply.
Calibration and recalibration of each instrument and gauge is required.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK13: For the second submission, all instruments and gauges shall have
been calibrated at the time of cutter delivery. Time lapse between actual
calibration dates of all the instruments/gauges and cutter delivery shall not
exceed 30 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-510 (A010)

BLK03-SUBTITLE: Auxiliary Systems Calculations

BLK04-AUTHORITY: Calculations and Stress Diagrams (CGDI-GDRQ-90001)

BLK05-CONTRACT REF: COR Sections 085-9.2.8, 256-1.11, 256-2.2, 256-2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

BLK 04: Calculations and analysis shall include computer printouts and examples. Deliverables shall be provided as required in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 12: Submit concurrent with CDRL 085-500.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-510_Attachment1_A010.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-511 (A006)

BLK03-SUBTITLE: Heating, Ventilation and Air Conditioning System

BLK04-AUTHORITY: Calculations and Stress Diagrams (CGDI-GDRQ-90001)

BLK05-CONTRACT REF: COR Sections 085-9.2.9 and 512-3.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCCR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Calculations and analysis shall include computer printouts and examples. HVAC Systems Calculations: Calculations shall demonstrate that the heating and cooling load analysis, system type selection, power estimates, and air flow, pressure and temperature calculations associated with each mode of system have been performed. The associated HVAC system diagram shall be submitted concurrently. The calculations shall demonstrate that all design air flow rates and pressures are satisfactory for the intended service.

Deliverables shall be provided as required in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the

deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be with the Final Drawings.

BLK 13: Submission shall be with the Final Drawings. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

CDRL_085-511_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-512 (A006)

BLK03-SUBTITLE: Mooring, Towing and Anchoring Systems Analysis

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Sections 085-9.2.10, 582-1.1 and 582-3.1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

Mooring analysis shall determine forces for breasting the cutter and fixed mooring under weather conditions stated in the COR. The analysis shall determine hawser, fittings, and equipment requirements. The analysis shall be suitable for inclusion into Equipment Operating Manuals.

Anchoring analysis shall be in accordance with the requirements of the COR. Anchoring analysis shall determine forces under conditions as stated in the COR. The analysis shall determine the requirements for anchor holding power, anchor weight, anchor chain, anchor winch/capstan, and associated equipment.

Towing analysis shall be in accordance with the requirements of the COR. Towing analysis shall determine forces generated by towing and being towed. The analysis shall determine primary hawser size, fitting sizes, and supporting equipment arrangements and requirements. Secondary hawser shall be as specified in the COR. The analysis shall verify that towing, while also permitting the simultaneous launch and recovery of the Cutter Boat, can be accomplished.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be with the Final Drawings.

BLK 13: Submission shall be with the Final Drawings. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-600 (A006)

BLK03-SUBTITLE: Cutter Boat Handling and Stowage

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.10 and 583

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawing shall show, as a minimum, the boat; boat launching, boat retrieval, boat handling equipment, boat stowage equipment and gear. Nearby interferences and clearances surrounding specified boat should be shown to determine crew's ability to efficiently launch, retrieve, load and offload personnel and equipment. Drawing shall also demonstrate that the boat launching and retrieval arrangement meets the requirements of the COR and that boat operations can be performed with no more than three crew members on deck.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government

furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.

b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.

c. All abbreviations shall be in accordance with MIL-STD-12.

d. The metric system shall be used only for those components designed in the metric system.

e. Lettering and line conventions shall be in accordance with ANSI Y14.2.

f. Dimensions and tolerances shall be in accordance with ASME Y14.5.

g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

h. Each drawing shall reference all related drawings.

i. Equipment shall be identified on all drawings by their assigned nomenclature and model or type number designations.

Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

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One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-601 (A006)

BLK03-SUBTITLE: Nameplate Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.11

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK04: Nameplate Drawings shall include the following as a minimum:
- Cutter Data Plaque
- Visual Identification
- Draft Marks
- Labels
- Damage Control Plates
The name plates, Labels, draft marks shall be in accordance with COR Section 601, 602, 603 and appropriate regulatory requirements.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

a. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.

b. All abbreviations shall be in accordance with MIL-STD-12.

c. The metric system shall be used only for those components designed in

the metric system.

d. Lettering and line conventions shall be in accordance with ANSI Y14.2.

e. Dimensions and tolerances shall be in accordance with ASME Y14.5.

f. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

g. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-602 (A006)

BLK03-SUBTITLE: Outfitting Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.12 and 600

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCCR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Outfitting Drawings shall include the following as a minimum:
- Hull Fittings; including mooring fittings, towing fittings, anchoring system and special hull fittings
- Handrails and Lifelines
- Rigging, Canvas and Curtains
- Non-Structural Bulkheads
- Floor Plates and Gratings
- Ladders and Steps
- Non-Structural Closures
- Windows and Defrosting Systems

Ship outfitting drawings shall be supported by engineering analysis to assure compliance with COR and regulatory requirements.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the

drawing files and shall be free of any restrictions on further use or licenses.

- a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.
- b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
- d. The metric system shall be used only for those components designed in the metric system.
- e. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- f. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.
- h. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-603 (A006)

BLK03-SUBTITLE: Life Saving Equipment Arrangement and and Detail Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.13

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Life Saving Equipment Arrangement and Detail Drawings shall include the following as a minimum:

- Life Rings / Throwable Devices
- Life Rafts / Boat Stowage
- Crane, Winches and/or Davits
- Fire Station(s) / Fire Fighting Equipment

The following information shall be included in the drawings in addition to the items shown in Table II:

- a. Heights above baseline shall be shown by figure dimensions on the outboard profile for critical safety equipment, miscellaneous platforms, navigation and signal lights, Pilot House deck, and top of Pilot House.
- b. Installations for equipment shall be delineated only as necessary for clear understanding, using straight line outline and labeling.
- c. Details of rails, stanchions and rigging, where a clear understanding of the actual installation can be obtained otherwise, need not be shown. Hinging of lifeline stanchions need not be shown.
- d. Drawing will show detailed arrangement of Life Rings, Life rafts, Boats

and Boat Stowage, Crane, Davits, Winches, Fire Stations, Fire Fighting Equipment and other safety related equipment.

e. Drawings shall include lists of reference drawings referring to all other related drawings.

Unless otherwise specified, drawings submitted for review shall be sufficiently complete to ensure that the drawings conform to the COR requirements and maintenance and repair accessibility is provided and indicated.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.

b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.

c. All abbreviations shall be in accordance with MIL-STD-12.

d. The metric system shall be used only for those components designed in the metric system.

e. Lettering and line conventions shall be in accordance with ANSI Y14.2.

f. Dimensions and tolerances shall be in accordance with ASME Y14.5.

g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-604 (A006)

BLK03-SUBTITLE: Paint Schedule/Corrosion Prevention Plan/Deck Covering Schedule

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.14, 631-1.1, 633 and 634

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK04: Schedules, Plans, and Lists shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf, CDRL_085-604_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-605 (A006)

BLK03-SUBTITLE: Cathodic Protection System Block Wiring Diagram and Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.15 and 633

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

CDRL_085-605_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-606 (A006)

BLK03-SUBTITLE: Hull Insulation and Sheathing

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-5.16, 635 and 637

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Drawings shall be prepared in accordance with attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per

the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf, CDRL_085-606_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-607 (A006)

BLK03-SUBTITLE: Living Compartments and Arrangements Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.17

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Living Compartments and Arrangements Drawings shall include the following as a minimum:

- Berthing and Messing Arrangement and Details
- Head and Shower Arrangement and Details
- Galley Arrangement and Details
- Built-In Furniture
- Portable Furniture
- Construction Details of Furniture
- Workshop Drawings of Furniture and Furnishings

Detailed arrangement of spaces shall show use or occupancy. In crew living spaces, the outline of berths, number of crew berthed, number of lockers, or other accommodations provided in each space shall be shown.

General arrangement of furniture and equipment in officer quarters, crew berthing, office, and similar spaces shall be shown in detail. Berths shall be marked single or double. Chairs or similar small articles of furniture shall be shown. Messing spaces shall indicate number of crew that can be seated in each space.

All compartments shall be designated by compartment number and by name. The following, where applicable, shall be labeled:

- a. Important structural components.
- b. Machinery
- c. Equipment.
- d. Access openings and closures.
- e. Appendages.
- f. Fittings.
- g. Ventilation trunks and major ducts.
- h. Rigging and antennas.
- i. Furniture.
- j. Life rafts and boats, giving length and type.
- k. Fire Stations etc.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

- a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.
- b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.
- c. All abbreviations shall be in accordance with MIL-STD-12.
- d. The metric system shall be used only for those components designed in the metric system.
- e. Lettering and line conventions shall be in accordance with ANSI Y14.2.
- f. Dimensions and tolerances shall be in accordance with ASME Y14.5.
- g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the

requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-608 (A006)

BLK03-SUBTITLE: Lockers and Special Stowage Drawings

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Section 085-5.18

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Lockers and Special Stowage Drawings shall include the following as a minimum:

- Weapons Mounts
- Small Arms Stowage
- Ready Service Locker(s)
- Pyrotechnics Locker(s)
- Stowage Plan
- DC Locker
- Magazine

Drawings shall include lists of reference drawings referring to all other related drawings.

The following information shall be included in the drawings.

a. Installations for commissary equipment, and furniture shall be delineated only as necessary for clear understanding, using straight line outline and labeling.

b. Details of rails, stanchions and rigging, where a clear understanding of the actual installation can be obtained otherwise, need not be shown.

c. Drawings will show detail installation and arrangement for Weapon Mounts, Small Arms Stowage, Ready Service Lockers, Pyrotechnics Lockers, Stowage Plan and DC Locker.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.

b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.

c. All abbreviations shall be in accordance with MIL-STD-12.

d. The metric system shall be used only for those components designed in the metric system.

e. Lettering and line conventions shall be in accordance with ANSI Y14.2.

f. Dimensions and tolerances shall be in accordance with ASME Y14.5.

g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

h. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.

The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be the Final Drawings.

BLK 13: Submission of final drawings: Drawings are to be developed per the As-Built configuration of the cutter and delivered after Builders Trials and prior to Preliminary Acceptance Trials. The Contractor shall resubmit within 30 DARC.

BLK 14: Hard Copy drawings shall be full size. The full-size hard copy set of drawings for the PCA is in addition to the copies required for the PRO. Cutter only receives the Final Drawing Submittal.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-610 (A006)

BLK03-SUBTITLE: Cutter Boat Launch and Recovery Analysis

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Sections 085-9.2.17 and 583

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: The analysis shall show the feasibility and justification of the launch/recovery system selected and that it fulfils the requirements of the COR, including, but not limited to, a description of the operation of the system including the best way(s) to load/offload boats with maximum passengers and crew, how the safe and efficient launch and retrieval of the small boat is provided in all required sea states, how simultaneous towing and launch/recovery operations are performed, and the emergency operation procedure in the event of failure of the primary launch and recovery system.

BLK10: The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

BLK12: Initial submissions for each phase of the deliverable are due in accordance with the Contractor-developed design review plan required by COR Section 068 and documented in the Integrated Master Schedule.

BLK13: Submission of the deliverable for Critical Design Review shall be 35 days before the scheduled Critical Design Review.

BLKs 10, 12, and 13: Government will provide comments within 30 days. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-611 (A006)

BLK03-SUBTITLE: Replenishment at Sea Analysis

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: COR Sections 085-9.2.18 and 541

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DPCDR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: The analysis shall determine forces acting on refueling equipment and determine primary fitting sizes, and supporting equipment requirements and arrangements.

All components associated with running rigging such as padeyes, fittings, blocks, sheaves, equipment, foundations, securing bolts, and supporting structure of the refueling station shall be designed to withstand the combination of the static loads applied plus those loads resulting from maximum ship motions in sea state 5. The equipment shall be designed with a factor of safety of 2.25 based on the ultimate strength of the material used or a factor of safety of 1.5 based on the yield strength of the material used, whichever results in the smaller allowable stress.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Three times, with revisions.
The deliverable shall be divided into several phases to correspond with the requirements of COR Section 068. For the purposes of initial (BLK12) and subsequent (BLK13) submissions, each phase will be treated independently. A revision shall be provided within any phase if design decisions cause a change in the machinery arrangements. The revision

requires re-submittal and approval. Revisions to approved phases of the deliverable may be submitted as one deliverable.

One deliverable shall be in conjunction with the Preliminary Design Review.

One deliverable shall be in conjunction with the Critical Design Review.

One deliverable shall be with the Final Drawings.

BLK 13: Submission shall be with the Final Drawings. The Contractor shall resubmit within 30 DARC.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 085-613 (A006)

BLK03-SUBTITLE: Cradle Structural Design Analysis

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Section 085-9.2.19

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 6 MPTD

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: The Cradle Structural Design; including Loads, Shipping, Tie Downs and Lifting Arrangements shall be in accordance with COR Section 673.

Drawings shall be developed in AutoCAD 2005, or later version of AutoCAD, in accordance with COMDTINST 9085.1. All drawings shall be made with the main details of the drawn full scale within the AutoCAD database and reduced by the plotting process or by use of "paper space." Each sheet of each drawing shall stand alone as a separate computer file and shall be identical to the final hard copy drawing it represents. Any special files referred to by the drawings, including fonts, shapes, or external references, shall be conveyed to the Government with the drawing files and shall be free of any restrictions on further use or licenses.

a. Unless otherwise specified, parts lists shall be integral with the drawing. The Parts List or Bill of Material shall include Item Number, Quantity, Description of Part, Part Number, National Stock Number, Material or Manufacturer and Specification Grade. If the equipment is Government furnished, the manufacturer's column shall indicate "GFE" and the Part Number column shall indicate the appropriate Joint Army Navy (JAN) nomenclature, if applicable.

b. Reservation notes indicating design development reservations, with items lined out as reservations are resolved shall be included in

preliminary drawings just above the title block. The pertinent details shall be so annotated where reservations apply.

c. All abbreviations shall be in accordance with MIL-STD-12.

d. The metric system shall be used only for those components designed in the metric system.

e. Lettering and line conventions shall be in accordance with ANSI Y14.2.

f. Dimensions and tolerances shall be in accordance with ASME Y14.5.

g. Mathematical signs and symbols shall be in accordance with ANSI Y10.20 and Y10.20a.

h. Each drawing shall reference all related drawings.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS:

MIL-DTL-31000C.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-001 (A006)

BLK03-SUBTITLE: Commercial Equipment Manuals, Drawings and Data

BLK04-AUTHORITY: Commercial Off-The-Shelf (COTS) Manuals and Associated Supplemental Data (DI-TMSS-80527B)

BLK05-CONTRACT REF: COR Section 086-2.3.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 320 DAC

BLK13-DATE OF SUBS SUBM: 45 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 2

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 04: Each commercial manual submitted shall meet the requirements of MIL-PRF-32216.

BLK 08: Government review and approval for technical content, accuracy and completeness. Allow 45 days for government review.

BLK 14: Electronic versions of manuals submitted shall meet the requirements of paragraphs 5, 6 and 7 of DID listed in BLK 04 and be included in the IPDE.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-002 (A006)

BLK03-SUBTITLE: Cutter Information Book

BLK04-AUTHORITY: Cutter Information Book TMCR (FRC-CIB-TMCR)

BLK05-CONTRACT REF: COR Section 086-2.3.8

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: A

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 6 MPTD

BLK13-DATE OF SUBS SUBM: ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 2, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 4

BLK16-REMARKS: BLK 02: TECHNICAL MANUAL CONTRACT REQUIREMENTS (TMCR) FOR FAST RESPONSE CUTTER-B CLASS (FRC-B) CUTTER INFORMATION BOOK (CIB).

BLK 04: Modify the DID as follows:
Section 3.3 add Sections 3.3.7 Chapter 7 Engineering Operating Procedures, 3.3.8 Chapter 8 C4ISR, 3.3.9 Chapter 9 Mooring Operational Booklet, and 3.3.10 Chapter 10 Towing Operational Booklet.

Section 3.3.7 Engineering Operating Procedures shall provide descriptions, operating instructions, operating principles and system level alignment and maintenance not covered in equipment level COTS or elsewhere in the CIB.

Section 3.3.8 C4ISR System Operation shall describe the C4ISR suite as an integrated system and provide as required system level maintenance and operation; provide both task oriented procedures as well as menu and function descriptions for the use of C4ISR console operators; describe network operation, topology and corrective maintenance procedures for the C4ISR networks.

Section 3.3.9 Mooring Operational Booklet shall detail arrangements for

breasting and mooring in calm and heavy weather. The chapter shall include mooring diagrams and details on how to take all mooring lines to power. The information is intended for use by bridge and deck personnel to facilitate execution of all types of mooring evolutions in all types of environmental conditions (e.g., wind, current, sea-state).

Section 3.3.10 Towing Operational Booklet shall detail all arrangements for towing and being towed in calm and heavy weather. The chapter shall include towing diagrams and details on how to take hawsers to power. The information is intended for use by bridge and deck personnel in executing all possible towing evolutions in all types of at-sea conditions (e.g., wind, current, sea-state).

BLK 08: Government review and approval for technical content, completeness, format and clarity. Allow 30 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-003 (A006)

BLK03-SUBTITLE: Technical Manual Validation Certificate

BLK04-AUTHORITY: Cutter Information Book TMCR (FRC-CIB-TMCR)

BLK05-CONTRACT REF: COR Section 086-2.4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: See TMCR Figure 1 for format.

BLK 12: One certificate shall be provided for each Technical Manual delivered.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-004 (A010)

BLK03-SUBTITLE: Interactive Electronic Technical Publication (IETP)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 086-2.5.1.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: A

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: Draft 30 DPCDR

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: IETPs shall be authored and developed in accordance with S1000D, v2.2, (<http://www.s1000d.org>) and COR Section 086. MIL-STD-40051-1 shall be utilized as a secondary reference if further clarification or guidance is required.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK12: Allow 30 days for Government review.

BLK13: Preliminary: 6 MPTD (30 days Government review)
Final: 2 MPTD (30 days Government review)

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-005 (A006)

BLK03-SUBTITLE: Technical Data Organization Plan (TDOP)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 086-2.7.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 90 DAC See Blk 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 3

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK12: Preliminary: 90 DAC (30 days for Government Review)
Final: 30 DPCDR (30 days for Government Review)

BLK13: Allow 15 days for Government Review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-006 (A006)

BLK03-SUBTITLE: Technical Data Index (TDI)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 086-2.7.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: 60 DPCDR

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID as follows:

Replace paragraph 1 with the following:
1. Format. Suitable database format to allow for easy sorting by cross-referenced categories, including title, Technical Publication Number (TPN), Ship Work Breakdown Structure (SWBS), Hierarchical Structure Code, Technical data/manual revision number, and change number. SWBS numbers shall map to the MECL SWBS number assignment for equipment.

Replace paragraph 2 with the following:
2. Content. For each boat system and equipment identified on the MECL, provide:

BLK08: Approval for format only.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-007 (A006)

BLK03-SUBTITLE: Technical Data Status Report (TDSR) of TDOP

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 086-2.7.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID as follows:

Replace paragraph 1 with the following:
1. Format. Contractor format, based upon the Technical Data Index (TDI).

Replace paragraph 2 with the following:
2. Content.
2.1 Provide a summary of the technical data development efforts outlined in the Technical Data Organization Plan. Highlight any problems or concerns with meeting the delivery schedule.
2.2 For each entry in the TDI, provide the status of development and validation, including planned delivery schedule.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 086-008 (A006)

BLK03-SUBTITLE: Technical Repair Standards (TRS)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 086-2.3.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: X

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: TRS's for the following equipment shall be developed in accordance with MIL-DTL-24784/7B and MIL-DTL-24784B:
Main engines
Reduction gears
Propellers (if provided)
Waterjets (if provided)
Propulsion Shafts
Rudders (if provided)
Pumps, Fans, Compressors and Motors (over 15hp)
Fin stabilizers (if fitted)
Generators (prime movers and generators)
Thrusters (if provided)
Auxiliary (Loiter) Drives (if provided)
Davits (if provided)

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK12: Submittal due 6 months after LCDD

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 087-001 (A006)

BLK03-SUBTITLE: Station Message Detail Recording (SMDR)

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 087-3.15.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** See BLK16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify the DID as follows:

Replace paragraph 1 with the following:
1. Format. The report shall be in electronic format, compatible with MS Excel, MS Access, or a delimited field ASCII file capable of being imported into MS Excel or MS Access.

Replace paragraph 2 with the following:
2. Provide fields containing the following information:
Field Description

Date Date call made/received
Time Time call made/received
Extension PRO extension call made/received from
Number Number dialed (outgoing)/Caller ID (Incoming, if available)
Duration Length of call in minutes

BLK12: First report due beginning the month following the establishment of the PRO offices at the Contractor's facility.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 088-001 (A006)

BLK03-SUBTITLE: Human Factors Engineering Program Plan

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 088-1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 120 DAC, See BLK16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK12: 120 DAC for Preliminary (30 days Government review)
30 DPCDR for Final (30 days Government review)

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 089-001 (A006)

BLK03-SUBTITLE: Training Development and Support Plan (TDSP)

BLK04-AUTHORITY: Introduction to the Coast Guard Training System Standard Operating Procedures (SOP_Vol1)

BLK05-CONTRACT REF: COR Section 089-3.1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Review and approval for technical content, accuracy, and completeness.

BLK 12:
Draft: 60 Days after CDR (Allow 60 days for Government review)

Preliminary: 12 months prior to CDD (Allow 60 days for Government review)

Final: 6 months prior to CDD (Allow 30 days for Government review).

Update Final: 9 months after CDD (Allow 30 days for Government review).

BLK 13: Precomissioning Crew Training Schedule shall be updated and delivered 6 months prior to each FRC-B delivery.

Plan shall include: Training Program and Equipment Lists, Training Schedules and Plan.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 089-002 (A006)

BLK03-SUBTITLE: Training Needs Assessment and Analysis

BLK04-AUTHORITY: Analysis Requirements (SOP_Vol2), ELearning Requirements (SOP_Vol7), Non-Instructional Interventions Requirements (SOP_Vol8)

BLK05-CONTRACT REF: COR Sections 089-3.5 and 089-3.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See BLK 16

BLK13-DATE OF SUBS SUBM: ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Review and approval for technical content, accuracy, and completeness.

BLK 12:
Preliminary: 15 months prior to CDD (Allow 60 days for Government review)

Final: 12 months prior to CDD (Allow 60 days for Government review)

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 089-003 (A006)

BLK03-SUBTITLE: Instructional Texts, Job Aids, and Training Aids

BLK04-AUTHORITY: Evaluation Requirements (SOP_Vol3), Job Aids Requirements (SOP_Vol4), Curriculum Outline Requirements (SOP_Vol6)

BLK05-CONTRACT REF: COR Sections 089-3.10, 089-3.11, 089-3.15.1, 089-5.4 and 089-6.3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD:

BLK10-FREQUENCY: ONE/R

BLK12-DATE OF 1ST SUBM: See Blk 16

BLK13-DATE OF SUBS SUBM: See Blk 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1, CUTTER 32

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 33

BLK16-REMARKS: BLK 08: Review and approval for technical content, accuracy, and completeness.

BLK 12: Preliminary 120 days prior to LCDD (45 days for Government Review)

BLK 13: Final 30 days prior to LCDD (15 days for Government Review)

BLK 14: 32 Hard copies of final student information shall be provided for each student as required by COR Section 089.

Data shall include Instructional Text, Job Aids, Training Aids, Student Guides, Evaluation Forms and Electronic Media and tools to provide a comprehensive Training Program for Factory and Familiarization Training.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 090-001 (A006)

BLK03-SUBTITLE: Quality Management Plan

BLK04-AUTHORITY: Quality System Plan (DI-QCIC-81379)

BLK05-CONTRACT REF: COR Section 090-1.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DAC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 8: Review and approval for technical content, completeness, adequacy and applicability. Allow 30 days for Government review.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 092-001 (A006)

BLK03-SUBTITLE: Test and Evaluation Program Plan

BLK04-AUTHORITY: Test and Evaluation Program Plan (TEPP) (DI-NDTI-81284)

BLK05-CONTRACT REF: COR Section 092-3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Modify DID as follows:

10.1.1 Page Size. Hard copies of the TEPP shall be provided on 8-1/2" by 11" paper.

BLK 08: Government review and approval for technical content, completeness, format and clarity. Allow 30 days for Government review.

BLK 12: Initial listing 30 days prior to CDR.

BLK 13: Submit entire TEPP package 90 days prior to any scheduled tests.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 092-002 (A006)

BLK03-SUBTITLE: Inspections, Tests, and Trials Reports

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Sections 092-4.1, 095-5.4, 404-7.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK12: Applicable test reports shall be submitted NLT 15 DATC. The
Government will provide comments within 15 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 092-003 (A006)

BLK03-SUBTITLE: Failure and Discrepancy Reports

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 092-5.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 5 DATC

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: Modify DID as follows:
Revise par 1 a. with: The Failure and Discrepancy Report shall be in the contractor's format.
Delete par 1 b thru d.
Revise par 2 (a) with: Title Page – Identifies the report by providing contract number, project name, and hull number,
Replace par 2 c. with:
2. (c) Failure and Discrepancy Report. Shall include the following:
2. (c) 1. Test Procedure.
2. (c) 2. Reason for Unsuccessful Performance.
2. (c) 3. Any supplemental information relating to the failure (ie. any internal contractor assessments, records, reports, correspondence, etc.)
2. (c) 4. Corrective Action.
2. (c) 5. Impact to the schedule.

Delete paragraph 2(d).

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 092-004 (A006)

BLK03-SUBTITLE: IPT Booklet

BLK04-AUTHORITY: Reports, Booklet of Ship Test (DI-T-23794A)

BLK05-CONTRACT REF: COR Section 092-5.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DATC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 092-005 (A006)

BLK03-SUBTITLE: Propulsion Machinery Operating Logs

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 092-6.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** Engine Light Off

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS:

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 092-006 (A006)

BLK03-SUBTITLE: Shipboard Test Booklet

BLK04-AUTHORITY: Reports, Booklet of Ship Test (DI-T-23794A)

BLK05-CONTRACT REF: COR Section 092-6.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 15 DPCDD

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS:

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 094-001 (A006)

BLK03-SUBTITLE: Builders At Sea Trials Report

BLK04-AUTHORITY: Ship Trial Report (CGDI-MGMT-90006)

BLK05-CONTRACT REF: COR Section 094-1.1.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit Builder's At-Sea Trials Report within 15 days after
completion of Builder's At-Sea Trials.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 094-002 (A006)

BLK03-SUBTITLE: Drydocking Report

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 094-1.13.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 7 days after Docking

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: The Docking Report shall include documentation of the condition of the underwater hull and appendages, as well as documentation of any mechanical/structural defects.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 096-001 (A006)

BLK03-SUBTITLE: Weight Control Program Plan

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A)

BLK05-CONTRACT REF: COR Section 096-2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DAC

**BLK13-DATE OF SUBS
SUBM:** 15 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: The Weight Control Plan shall be in accordance with the reporting requirements provided in paragraph 5.3.4.1 Society of Allied Weight Engineers (SAWE) Recommended Practice number 12 and the requirements of the COR.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 096-002 (A006)

BLK03-SUBTITLE: Design and Construction Weight Report (DCWR)

BLK04-AUTHORITY: Mass Properties Data Report (Surface Ships) (DI-MISC-81357)

BLK05-CONTRACT REF: COR Section 096-4.1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: QRTLY

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK04: Modify DID as follows:
Replace all references to MIL-STD-2137A with Society of Allied Weight Engineers, Recommended Practices 12, Weight Control Technical Requirements for Surface Ships - SAWE-RP12 (2002).

Replace 10.2 with: Format. Contractors format, appropriate for the presentation of the data required by SAWE-RP12.

Replace 10.3 with: Content. The content for the report shall be as specified in Sections 4 (as modified, see note following), 5.1 through 5.1.2.3, 5.1.2.9, 5.3, 5.3.1, 5.3.1.1, 5.3.1.5, 5.3.2 through 5.3.2.2, 5.3.4.2, 5.3.4.3, 5.3.4.4, and 5.3.4.5 of SAWE-RP12. Note: In paragraph 4.2.6, delete the sentence 'Transverse ... starboard.' and insert the sentence 'Transverse levers port of centerline shall be indicated by 'p' or '-', and starboard of centerline shall be indicated by 's' or '+'.'

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 096-003 (A006)

BLK03-SUBTITLE: Final Weight Report (FWR)

BLK04-AUTHORITY: Mass Properties Data Report (Surface Ships) (DI-MISC-81357)

BLK05-CONTRACT REF: COR Section 096-4.2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** BT

**BLK13-DATE OF SUBS
SUBM:** 15 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: Modify DID as follows:

Add 10.2.8.a: Provide an appendix summarizing the results of scale weighing tests conducted to date. Include the hull number, its weight, the configuration baseline to which it was constructed (identifying any configuration changes that affected that baseline), the deviation of the weight from the baseline weight, and any notes explaining the deviation. Present the information in tabular form, indexed in reverse order by hull number, with the subject FRC listed first. Provide as reference, either in the footer or on a separate page, the initial weights for each configuration baseline.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 097-001 (A006)

BLK03-SUBTITLE: Inclining Experiment Procedures

BLK04-AUTHORITY: Inclining Experiment Procedures (CGDI-NDTI-90027)

BLK05-CONTRACT REF: COR Section 097-1.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 15 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: For CGDI-NDTI-90027, in paragraph 10.2, change "NVIC 15-81 shall be used for guidance" to "COMDTINST M9000.6E shall be used."

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: To be submitted for each inclining experiment.

BLK12: First submittal shall be NLT 90 days before test event.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 097-002 (A006)

BLK03-SUBTITLE: Inclining Experiment Report

BLK04-AUTHORITY: Scientific and Technical Reports (DI-MISC-80711A), Ships, Booklet of Inclining Experiment Data (DI-MISC-80904)

BLK05-CONTRACT REF: COR Section 097-1.9

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 15 DATC

BLK13-DATE OF SUBS SUBM: 15 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK04: For DI-MISC-80904: Paragraphs 10.1, 10.2, 10.3, 10.3.1, 10.3.2, 10.3.4, 10.3.5, and 10.3.6 apply.

Modify DI-MISC-80711A as follows:
Replace 10.2 with the following:
10.2 Document format shall be in accordance with the attached Stability Test Form.pdf file or in a Contractor's format that provides the same information as a minimum. A Contractor's format shall be submitted in electronic format and may be generated in Microsoft Word, Microsoft Excel, HEC Incline, GHS, AutoHydro or a combination of these programs. Both the input and output of either the HEC, GHS or AutoHydro programs shall be provided in electronic format. GHS input (both the geometry file and the run files) and output shall be provided as MSWord readable files, i.e. document files, or text files. Note that the normal native GHS "GF" and "RUN" files are text files and fulfill this requirement, but the "REPORT" output format generated by GHS does not. GHS runs shall not be generated or presented in the "REPORT" file format, and neither hard copy nor scanned output of the "REPORT" format will be accepted. Text file output of GHS runs captured by the "DISK" command or such files subsequently imported into Microsoft Word satisfy this requirement.

Add the following:

10.4 Report shall include digital photographs of FRC that document the conditions and procedures during testing. Photographs shall document test set-ups, including pendulums and weight placements, and draft marks if appropriate. Pictures shall record the use of support equipment in conducting the tests. Photographs required as follows:

1) All draft marks, showing the water line, so that the waterline at incline condition can be verified.

2) Inclining weight placement, such that the starting and moved positions are shown (presumably marks on the deck or on the plywood protecting the deck, or possibly the weights in both positions, etc.)

3) Pendulums

4) Any large or unusual weights to deduct, such as trimming weights, shipyard equipment to be removed, etc.

5) Any spaces, foundations for deck equipment (such as guns) etc. that remain incomplete with substantial weights to add or relocate.

6) At least five freeboards (each P/S, hence ten readings), independent of the draft marks, taken along the length of FRC-B identified by reference points on the hull.

10.5 Report shall compare centers of gravity to stability limits.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: To be submitted for each inclining experiment.

ATTACHMENTS:

None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 100-001 (A006)

BLK03-SUBTITLE: Resin Curing Documentation

BLK04-AUTHORITY: Laminating Process Description (Boats) (DI-MISC-80703)

BLK05-CONTRACT REF: COR Section 100-5.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: MTHLY

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit within 30 days after first lamination.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 100-002 (A006)

BLK03-SUBTITLE: Repair Plan

BLK04-AUTHORITY: Request for Deviation (RFD) (DI-CMAN-80640C)

BLK05-CONTRACT REF: COR Section 100-11.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** ASREQ

**BLK13-DATE OF SUBS
SUBM:** 7 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity. Allow 15 days for Government review
and approval.

BLK 10: As the need for repair is identified.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 200-001 (A006)

BLK03-SUBTITLE: Major Equipment Installation Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: 200-1.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:** See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 13: Submit NLT 60 days prior to first installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 233-001 (A010)

BLK03-SUBTITLE: Propulsion Engine Rating Data/Verification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 233-2.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** See BLK16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: 30 days after certification

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 233-002 (A010)

BLK03-SUBTITLE: Propulsion/Generator Diesel Emission Testing Report

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Sections 233-3 and 502-13.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 30 DARC

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 243-001 (A006)

BLK03-SUBTITLE: Propulsion Shafting Survey Report

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Section 243-4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4 Design data calculations shall be in accordance with the requirements of the COR.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: Shaft run-outs shall be performed first at the manufacturer's facility and then at the contractor's facility prior to installation in the FRC-B.

BLK 12: Submit shaft run-outs NLT 15 days prior to installation. Submit Shafting Alignment Report NLT 15 days after completion of shafting alignment.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 243-002 (A006)

BLK03-SUBTITLE: Shaft to Engine/Reduction Gear Alignment Verification Report

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Section 243-4.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 15 DAPAT

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: ELC-024 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 2

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 243-003 (A006)

BLK03-SUBTITLE: Shaft Material Test Report

BLK04-AUTHORITY: Technical Information Report (DI-MISC-80652)

BLK05-CONTRACT REF: COR Section 243-5.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 35 DPCDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Propulsion Shafting material certification report shall be reported
in accordance with ABS NVR 2-4-1/2.2.3.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Government will provide comments within 15 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 245-001 (A006)

BLK03-SUBTITLE: Propeller, Waterjet, and Related System Equipment Compliance Report

BLK04-AUTHORITY: Technical Information Report (DI-MISC-80652)

BLK05-CONTRACT REF: COR Section 245-1.2, 245-2.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 35 DPCDR

**BLK13-DATE OF SUBS
SUBM:** ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Design data calculations shall be in accordance with the requirements of the COR.

BLK 5: Copies of all contractor/ABS certification documents including analyses and reports, plus ABS certification shall be provided. Analysis shall be provided to show compliance with propeller cavitation requirements of COR Section 245-2.2. Report shall meet the requirements of ABS NVR 2-4-3/6.1 and 2-4-3/6.2.

BLKs 12, and 13: Government will provide comments within 30 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 245-002 (A006)

BLK03-SUBTITLE: Propeller Tolerance Compliance Report

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Section 245-3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 5: Report of propeller dimensional inspection and balance measurements shall be provided IAW NAVSEA S9245-AR-TSM-010/PROP, Technical Manual Marine Propeller Inspection Repair and Certification.

BLK 12: Submit report NLT 15 days after receipt of propeller. Government will provide comments within 15 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 245-003 (A006)

BLK03-SUBTITLE: Propeller Material Chemical Composition and Mechanical Property Report

BLK04-AUTHORITY: Technical Information Report (DI-MISC-80652)

BLK05-CONTRACT REF: COR Section 245-3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** 35 DPCDR

**BLK13-DATE OF SUBS
SUBM:** ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Report of Propeller Material Chemical Composition and
Mechanical Property shall be provided.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLKs 12, and 13: Government will provide comments within 15 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 245-004 (A006)

BLK03-SUBTITLE: Propeller Report for Taper Fit

BLK04-AUTHORITY: Technical Information Report (DI-MISC-80652)

BLK05-CONTRACT REF: COR Sectio 245-3.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16.

**BLK13-DATE OF SUBS
SUBM:** ASREQ

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Report of Propeller Taper Fit blue check contact area during
installation shall be provided.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Provide report NLT 30 days prior to installation.

BLKs 12, and 13: Government will provide comments within 15 days.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 302-001 (A006)

BLK03-SUBTITLE: Electric Motors Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 302-4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.
BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 303-001 (A006)

BLK03-SUBTITLE: Protective Devices for Electric Circuits Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 303-4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 304-001 (A006)

BLK03-SUBTITLE: Electric Cables Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 304-2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 310-001 (A006)

BLK03-SUBTITLE: Ship Service Generator Test Report

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 310-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Test Report NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 313-001 (A006)

BLK03-SUBTITLE: Batteries and Battery Chargers Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 313-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.2.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 314-001 (A006)

BLK03-SUBTITLE: Power Conversion Equipment Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 314-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 324-001 (A006)

BLK03-SUBTITLE: Switchboard Vibration Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 324-1.2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 324-002 (A006)

BLK03-SUBTITLE: Switchboard, Distribution Panel, and Bus Transfer Device Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 324-2.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 330-001 (A006)

BLK03-SUBTITLE: Lighting Systems Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 330-8.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2,4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-001 (A010)

BLK03-SUBTITLE: Electromagnetic Environmental Effects (E3) Integration and Analysis Report (E3IAR)

BLK04-AUTHORITY: Electromagnetic Environmental Effects (E3) Integration and Analysis Report (E3IAR) (DI-EMCS-81540A)

BLK05-CONTRACT REF: COR Section 400-3.12.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

BLK12-DATE OF 1ST SUBM: 30 DPPDR

BLK13-DATE OF SUBS SUBM: 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Report shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 10: A revision shall be provided if design decisions cause a change in the electronics arrangements. The revision requires re-submittal and approval.

BLK 13: The Government will provide comments within 30 days of receipt.

ATTACHMENTS: CDRL_400-001_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-002 (A010)

BLK03-SUBTITLE: Electromagnetic Environmental Effects (E3) Verification Procedures (E3VP)

BLK04-AUTHORITY: Electromagnetic Environmental Effects (E3) Verification Procedures (E3VP) (DI-EMCS-81541A)

BLK05-CONTRACT REF: COR Section 400-3.12.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

BLK12-DATE OF 1ST SUBM: 60 DPCDR

BLK13-DATE OF SUBS SUBM: 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 04: Document shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content, completeness, format and clarity.

BLK 13: The Government will provide comments within 60 days of receipt.

ATTACHMENTS: CDRL_400-002_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-003 (A010)

BLK03-SUBTITLE: Electromagnetic Environmental Effects (E3) Verification Report (E3VR)

BLK04-AUTHORITY: Electromagnetic Environmental Effects (E3) Verification Report (E3VR)
(DI-EMCS-81542A)

BLK05-CONTRACT REF: COR Section 400-3.12.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 30 DATC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 13: The Government will provide comments within 60 days of receipt.

ATTACHMENTS: CDRL_400-003_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-004 (A014)

BLK03-SUBTITLE: Equipment Certification Cover Letter

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 400-3.11

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Modify DID as follows:
Delete: 2.(b), 2.(c), and 2.(d)
Add: 2.(e): Data shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 10: A report shall be submitted for each for each system containing
components without a FCC part 15 ID label or SPS certification. A revision
shall be provided if design decisions cause a change in the electronics
equipment. The revision requires re-submittal and approval.

BLK 13: The Government will provide comments within 30 days of receipt.

ATTACHMENTS: CDRL_400-004_Attachment1.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-005 (A014)

BLK03-SUBTITLE: Transmitter Equipment Characteristics Report

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 400-3.11

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Modify DID as follows:
Delete: 2.(b), 2.(c), and 2.(d)
Add: 2.(e): Data shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 10: A report shall be submitted for each for each component without a
FCC part 15 ID label or SPS certification. A revision shall be provided if
design decisions cause a change in the electronics equipment. The
revision requires re-submittal and approval.

BLK 13: The Government will provide comments within 30 days of receipt.

ATTACHMENTS: CDRL_400-005_Attachment1.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-006 (A014)

BLK03-SUBTITLE: Receiver Equipment Characteristics Report

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 400-3.11

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Modify DID as follows:
Delete: 2.(b), 2.(c), and 2.(d)
Add: 2.(e): Data shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 10: A report shall be submitted for each for each component without a
FCC part 15 ID label or SPS certification. A revision shall be provided if
design decisions cause a change in the electronics equipment. The
revision requires re-submittal and approval.

BLK 13: The Government will provide comments within 30 days of receipt.

ATTACHMENTS: CDRL_400-006_Attachment1.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 400-007 (A014)

BLK03-SUBTITLE: Antenna Equipment Characteristics Report

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 400-3.11

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DARC, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 04: Modify DID as follows:
Delete: 2.(b), 2.(c), and 2.(d)
Add: 2.(e): Data shall be prepared in accordance with Attachment 1.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 10: A report shall be submitted for each for each component without a
FCC part 15 ID label or SPS certification. A revision shall be provided if
design decisions cause a change in the electronics equipment. The
revision requires re-submittal and approval.

BLK 13: The Government will provide comments within 30 days of receipt.

ATTACHMENTS: CDRL_400-007_Attachment1.pdf

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 401-001 (A006)

BLK03-SUBTITLE: Computer Wire Data List

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 401-3.12

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: E

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Data shall be prepared in accordance with Microsoft Access® data
base template attached.

BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit 30 days prior to BT.

ATTACHMENTS: CDRL_401-001_Attachment1.mdb

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 405-001 (A006)

BLK03-SUBTITLE: Antenna Radiation Patterns

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 405-4.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: C

BLK10-FREQUENCY: 2TIME

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCDR

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 412-001 (A006)

BLK03-SUBTITLE: Fiber Optic Cable Certification Report

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 412-2.4

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 15 DATC

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2,4, and 10.5 apply.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 431-001 (A006)

BLK03-SUBTITLE: IC Load Summary and System Capacity Calculations

BLK04-AUTHORITY: Design Data, Analyses and Calculations (CGDI-GDRQ-80094)

BLK05-CONTRACT REF: COR Section 431-1.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ASREQ

**BLK12-DATE OF 1ST
SUBM:** 30 DPPDR

**BLK13-DATE OF SUBS
SUBM:** 30 DPCCR, See BLK 16

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK10: One deliverable shall be delivered in conjunction with PDR.

One deliverable shall be in conjunction with the CDR.

One deliverable shall be with the Final Drawings.

BLK13: Subsequent submissions will be due 15 DARC.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 502-001 (A006)

BLK03-SUBTITLE: Diesel Engine Data

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Sections 233-1.3 and 502-1.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** CDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: None

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 0

BLK16-REMARKS:

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 502-002 (A006)

BLK03-SUBTITLE: Auxiliary Diesel Engine Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 502-1.5

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 30 DPCDR

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2,4, and 10.5 apply.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 512-001 (A006)

BLK03-SUBTITLE: HVAC Test Procedures and Results

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Section 512-5.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit procedures 90 days prior to test. Submit report NLT 15
days after test.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 562-001 (A006)

BLK03-SUBTITLE: Rudder Stock, Pintles and Palm Bolt Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 562-2.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 583-001 (A006)

BLK03-SUBTITLE: Engine Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 583-1.1.5.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2,4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days prior to installation.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 583-002 (A006)

BLK03-SUBTITLE: Static Load Test

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Section 583-4.9.2

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit procedures NLT 90 days before Test. Submit report NLT
15 days after test.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 583-003 (A006)

BLK03-SUBTITLE: Dynamic Overload Test

BLK04-AUTHORITY: Test/Inspection Report (DI-NDTI-80809B)

BLK05-CONTRACT REF: COR Section 583-4.9.3

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit procedures NLT 90 days before test. Submit report NLT
15 days after test.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 602-001 (A006)

BLK03-SUBTITLE: Damage Control Classifications

BLK04-AUTHORITY: Technical Report - Study/Services (DI-MISC-80508A)

BLK05-CONTRACT REF: COR Section 602-6.4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: ELC-012 1, CG-9361 1, PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 3

BLK16-REMARKS: BLK 8: Review and approval for content, clarity and completeness. Allow
30 days for Government review.

BLK 12: Submit NLT 30 days after Critical Design Review (CDR) has been
conducted.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 602-002 (A006)

BLK03-SUBTITLE: Compartment Check-Off Lists (CCOLs)

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 602-6.4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: ONE/R

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:** 30 DARC

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CUTTER 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 08: Government review and approval for technical content,
completeness, format and clarity.

BLK 12: Submit 120 days prior to Lead Cutter delivery. Approved CCOLs
shall be installed on each cutter at time of delivery.

BLK 14: Each cutter shall be provided a booklet of approved CCOLs at
delivery.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 603-001 (A006)

BLK03-SUBTITLE: Draft Marking Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 603-1.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** See BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2.4, 10.3.4, and 10.5 apply.
BLK 12: Submit Certification Letter NLT 30 days prior to FRC launching.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: 611-001 (A006)

BLK03-SUBTITLE: Load Carrying Members Certification

BLK04-AUTHORITY: Certification/Data Report (DI-MISC-80678)

BLK05-CONTRACT REF: COR Section 611-4.1

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE:

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** SEE BLK 16

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: PRO 1

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 1

BLK16-REMARKS: BLK 4: Paragraphs 10.1, 10.2, 10.2.1, 10.2,4, and 10.5 apply.

BLK 12: Submit Certification Letter NLT 15 days after test.

ATTACHMENTS: None

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: TDP-001 (A006)

BLK03-SUBTITLE: Product Drawings/Models and Associated Lists

BLK04-AUTHORITY: Product Drawings/Models and Associated Lists (DI-SESS-81000C)

BLK05-CONTRACT REF: SOW Section C.16.3.2.1

BLK07-DD 250 REQUIRED: DD

BLK08-APP CODE: See BLK 16

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 405 DAOE

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 5

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK 4: See TDP Attachments "1" and "2".
BLK 8: Review and approval for technical content and whether material submitted meets contractual requirements. Allow 120 days for Government review.

BLKS 14/15: REGULAR COPIES: One complete hard copy set of all reproducible detailed.
REPRODUCIBLES: One set of reproducible shall be mylars of cutter drawings in accordance with the requirements of TDP Attachments "1" and "2". Two sets of reproducible for all studies, drawings, and calculations shall be provided on electronic media (CD-ROM). See TDP Attachment "2" for specific drawing requirement media. Two sets of reproducible shall be good quality originals of all remaining data not provided by the reproducible described above.

ATTACHMENTS: TDPPProductDwgs.doc, TDPRequirementsAttach.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: TDP-002 (A006)

BLK03-SUBTITLE: Special Inspection Equipment (SIE) Drawings/Models and Associated Lists

BLK04-AUTHORITY: Special Inspection Equipment (SIE) Drawings/Models and Associated Lists (DI-SESS-81004C)

BLK05-CONTRACT REF: SOW Section C.16.3.2.2

BLK07-DD 250 REQUIRED: DD

BLK08-APP CODE: See BLK 16

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

BLK12-DATE OF 1ST SUBM: 405 DAOE

BLK13-DATE OF SUBS SUBM:

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 5

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK 4: See TDP Attachments "1" and "2".
BLK 8: Review and approval for technical content and whether material submitted meets contractual requirements. Allow 120 days for Government review.

BLKS 14/15: REGULAR COPIES: One complete hard copy set of all reproducibles detailed.
REPRODUCIBLES: One set of reproducibles shall be mylars of cutter drawings in accordance with the requirements of TDP Attachments "1" and "2". Two sets of reproducibles for all studies, drawings, and calculations shall be provided on electronic media (CD-ROM). See TDP Attachment "2" for specific drawing requirement media. Two sets of reproducibles shall be good quality originals of all remaining data not provided by the reproducibles described above.

ATTACHMENTS: TDPPProductDwgs.doc, TDPRequirementsAttach.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: TDP-003 (A006)

BLK03-SUBTITLE: Special Tooling (ST) Drawings/Models and Associated Lists

BLK04-AUTHORITY: Special Tooling (ST) Drawings/Models and Associated Lists (DI-SESS-81008C)

BLK05-CONTRACT REF: SOW Section C.16.3.2.3

BLK07-DD 250 REQUIRED: DD

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

BLK12-DATE OF 1ST SUBM: 405 DAOE

BLK13-DATE OF SUBS SUBM:

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 5

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK 4: See TDP Attachments "1" and "3".
BLK 8: Review and approval for technical content and whether material submitted meets contractual requirements. Allow 120 days for Government review.

BLKS 14/15: REGULAR COPIES: One complete hard copy set of all reproducibles detailed.
REPRODUCIBLES: One set of reproducibles shall be mylars of cutter drawings in accordance with the requirements of ELIN TDP Attachments "1" and "3". Two sets of reproducibles for all studies, drawings, and calculations shall be provided on electronic media (CD-ROM). See TDP Attachment "3" for specific drawing requirement media. Two sets of reproducibles shall be good quality copies or originals of all remaining data not provided by the reproducibles described above.

ATTACHMENTS: TDPSpecialTooling.doc, TDPRequirementsAttach.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: TDP-004 (A006)

BLK03-SUBTITLE: Specifications

BLK04-AUTHORITY: System/Subsystem Specification (SSS) (DI-IPSC-81431A)

BLK05-CONTRACT REF: SOW Section C.16.3.2.4

BLK07-DD 250 REQUIRED: DD

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

BLK12-DATE OF 1ST SUBM: 405 DAOE

BLK13-DATE OF SUBS SUBM:

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 5

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK 4: Format and content of Specification shall be in accordance with MIL-STD-961E, Paragraph 5: Detailed Requirements. See TDP Attachments "4".
BLK 8: Review and approval for technical content and whether material submitted meets contractual requirements. Allow 120 days for Government review.

BLKS 14/15: REGULAR COPIES: One complete hard copy set of all reproducibles detailed.
REPRODUCIBLES: One set of reproducibles shall be Camera Ready Copy (CRC) with integral artwork. Four copies of reproducibles shall be provided on electronic media (CD-ROM).

ATTACHMENTS: TDPSpecification.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: TDP-005 (A006)

BLK03-SUBTITLE: Software Product Specification

BLK04-AUTHORITY: Software Product Specification (SPS) (DI-IPSC-81441A)

BLK05-CONTRACT REF: SOW Section C.16.3.2.5

BLK07-DD 250 REQUIRED: DD

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 405 DAOE

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 5

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK 4: See TDP Attachment "5".

BLK 8: Review and approval for technical content and whether material submitted meets contractual requirements. Allow 120 days for Government review.

BLKS 14/15: REGULAR COPIES: One complete hard copy set of all reproducibles detailed below.
REPRODUCIBLES: One set of reproducibles shall be Camera Ready COPY (CRC) with integral artwork. Four sets of reproducibles shall be on electronic media CD-ROM.

ATTACHMENTS: TDPSoftwareSpec.doc

**FAST RESPONSE CUTTER - B PROJECT
CONTRACT DATA REQUIREMENTS LIST
CONTRACT NO: HSCG23-07-R-AFR001 (See Section J - COR Section 042-6)**

BLK01-SEQUENCE NO.: TDP-006 (A006)

BLK03-SUBTITLE: Test Requirements Document

BLK04-AUTHORITY: Test Requirements Document (TRD) (DI-ATTS-80041A)

BLK05-CONTRACT REF: SOW Section C.16.3.2.6

BLK07-DD 250 REQUIRED: LT

BLK08-APP CODE: A

BLK09-DIST STMT REQD: F

BLK10-FREQUENCY: OTIME

**BLK12-DATE OF 1ST
SUBM:** 405 DAOE

**BLK13-DATE OF SUBS
SUBM:**

BLK14-DISTRIBUTION: Electronic Copy: IPDE
Hard Copies: CG-9361 5

BLK15-TOTAL: Electronic Copy: Yes
Hard Copies: 5

BLK16-REMARKS: BLK 8: Review and approval for technical content and whether submittal meets contractual requirements. Allow 120 days for Government review.

ATTACHMENTS: None

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 4: External References List

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1. [RFP] REFERENCED DOCUMENTS

- 1.1. [RFP] Throughout this Solicitation/Contract, where external documents are referenced, the version, amendment, or revision specified in this attachment shall apply.
- 1.2. [RFP] Please reference Section [L.2](#) for availability of specifications listed in the GSA index of federal specifications, standards and commercial item descriptions.

2. [RFP] ORDER OF PRECEDENCE

- 2.1. [A004] The order of precedence is specified in Section [I.1](#), 52.215-8, and in the Circular of Requirements Section [042-5](#).
- 2.2. [RFP] The offeror/contractor shall immediately notify the contracting officer in writing of any perceived conflicts herein.

3. [A014] GOVERNMENT DOCUMENTS

Defense and Federal Specifications

Title	Location	Date	Link
A-A-50435B – Ropes (ARAMID)	COR 582-4	24 Mar 1992	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=70796
A-A-50552 NOT 1 – Fittings For Cable, Power, Electrical And Conduit, Metal, Flexible	COR 404-3	30 Oct 2001	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=116783
A-A-59002/1 – Loudspeaker, Shipboard Announcing Systems Encased, 70.7 Volt, 1 To 5 Volt-Amperes	COR 433-3	31 May 1995	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=116619
A-A-59002/2 – Loudspeaker, Shipboard Announcing Systems Encased, 70.7 Volt, 6 To 15 Volt-Amperes	COR 433-3	31 May 1995	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=116620
A-A-59003 – Amplifiers, Audio Frequency; And Amplifier-Control Groups-Shipboard Announcing	COR 433-3	31 May 1995	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=116510
A-A-59308 NOT 1 – Clinometers, Ship, And Accessories	COR 421-3	12 May 2004	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=203942
A-A-59588A – Rubber, Silicone	COR 078-5	07 Jul 2005	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=209285
DoD 2003 – Electric Plant Installation Standard Methods For Surface Ship And Submarines	COR 304-2	17 Dec 1990	http://assist.daps.dla.mil/quicksearch/ ("Document ID" enter: DOD "Document Number" enter: 2003)
DOD-STD-2003-1(1) – ELECTRIC PLANT INSTALLATION STANDARD METHODS FOR SURFACE SHIPS AND SUBMARINES (CABLE) SECTION 1 OF 5	COR 400-3	17 Dec 1990	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=70665
DoD 3235.1-H – Department of Defense Test & Evaluation of System Reliability Availability and Maintainability - A Primer	COR 076-3	Mar 1982	http://www.dtic.mil/whs/directives/corres/html/323501h.htm
DoDD 8500.1 – Information Assurance (IA)	COR 412-4	24 Oct 2002	http://www.dtic.mil/whs/directives/corres/html/850001.htm
DoDD 8500.2 – H, Information Assurance (IA) Implementation	COR 412-4	06 Feb 2003	DoDD 8500.2
DoD-HDBK-289 – Lighting On Naval Ships (Metric)	COR: 330-1 332-1 095-11	26 Nov 1986	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=54001
DoDI 8510.bb – Interim Department of Defense Information Assurance Certification and Accreditation Process (DIACAP) Instruction	COR 412-4	06 Jul 2006	DoDI 8510.bb

DoDI-24688(1) – Insulation Panel, Thermal And Acoustic Absorptive, Open-Cell Polyimide Foam	COR 635-1	24 Sep 1996	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=17752
DoD-STD-1399-301A – Interface Standard For Shipboard Systems Section 301a Ship Motion And Attitude (Metric)	COR 170-3.2	21 Jul 1986	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=36821
FED-STD-123G – Marking For Shipment (Civil Agencies)	D.2.1	06-JUN-1997	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=53665
FED-STD-376B – Preferred Metric Units for General Use by the Federal Government	COR 070-10	27 Jan 1993	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=53792
FED-STD-1045A – Telecommunications: HF Radio Automatic Link Establishment	COR 440-3	18 Oct 1993	http://www.its.blrdoc.gov/fs-1045a/
MIL-A-18001K(2) – Anodes, Sacrificial Zinc Alloy	COR 256-1	2 May 2005	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=12627
MIL-A-21016F – Adhesive, Resilient Deck Covering	COR 634-3	21 May 1990	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=14456
MIL-C-17 (series) – Coaxial Cable	COR 095-11 COR 404-5		http://assist.daps.dla.mil/quicksearch/enter MIL-C-17
MIL-C-9084C(1) – Cloth, Glass, Finished, For Resin Laminates (S/S BY SAE-AMS-C-9084)	COR 078-3	10 Sep 1999	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=7492
MIL-C-18255E(1) NOT 1– Calking Compound, Synthetic Rubber Base, Wooden Deck Seam Application (See Notice 1 For Replacement Information)	COR 078-5	25 Oct 2005	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=12751
MIL-C-19663D NOT 1 – Cloth, Woven Roving, For Plastic Laminate (No S/S Document)	COR 078-3	29 Jun 1999	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=13948
MIL-DTL-17/223(4) – Cable, Radio Frequency, Flexible, Coaxial, 50 Ohms, Low Smoke, Low Loss Diameter .405	COR 404-6	17 Dec 2002	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=204015
MIL-DTL-1222J – Studs, Bolts, Screws And Nuts For Applications Where A High Degree Of Reliability Is Required; General Specification For	COR 075-1	08 Dec 2000	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=2901
MIL-DTL-15024F – Plates, Tags, and Bands for Identification of Equipment, General Specification for	COR 507-4	28 Nov 1997	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=11007
MIL-DTL-5624U – TURBINE FUEL, AVIATION, GRADES JP-4 AND JP-5	COR 233-6	05 Jan 2004	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=5558
MIL-DTL-15562G – Matting Or Sheet, Floor Covering, Insulating For High Voltage Application	COR 634-2	31May 1996	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=11339
MIL-DTL-16884L – Fuel, Naval Distillate	COR 233-6	23 Oct 2006	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=12122
MIL-DTL-24050E – Rope, Fibrous, Double-Braided (Nylon)	COR 582-4	25 Jan 1999	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=16772

MIL-DTL-24640B(1) SUP 1 – Cables, Light-Weight, Electric, For Shipboard Use, General Specification For	COR: 304-2 400-3 583-1	16 Dec 2004	http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=17572
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46 CFR 111.10.1(a) (Title 46, Chapter 1, Part 111, Subpart 10, Section 1)	COR 300-2	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr111_06.html
46 CFR 111.15 (Title 46, Chapter 1, Part 111, Subpart 15) – Storage Batteries And Battery Chargers: Construction And Installation	COR: 313-2 313-5	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr111_06.html
46 CFR 111.15-10 (Title 46, Chapter 1, Part 111, Subpart 15, Section 10) – Ventilation	COR 512-4	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr111_06.html
46 CFR 111.25 (Title 46, Chapter 1, Part 111, Subpart 25) – Motors	COR: 302-2 302-2	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr111_06.html
46 CFR 111.50 (Title 46, Chapter 1, Part 111, Subpart 50) – Overcurrent Protection	COR: 303-2 303-4	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr111_06.html
46 CFR 111.87 (Title 46, Chapter 1, Part 111, Subpart 87) – Electric Air Heating Equipment	COR 512-4	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr111_06.html
46 CFR 113.30-5(Title 46, Chapter 1, Part 113, Subpart 30, Section 5) – Requirements	COR 437-2	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr113_06.html
46 CFR 159.010 (Title 46, Chapter 1, Part 159 Subpart 010) – Independent Laboratory: Acceptance, Recognition, and Termination	COR 300-8	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr159_06.html
46 CFR 160.017 (Title 46, Chapter 1, Part 160 Subpart 017) – Chain Ladder	COR 623-7	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr160_06.html
46 CFR 161 (Title 46, Chapter 1, Part 161) – Electrical Equipment	COR 422-3	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr161_06.html
46 CFR 161.002 (Title 46, Chapter 1, Part 161 Subpart 002) – Fire Protective Systems	COR: 436-3	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr161_06.html
46 CFR 162.050 (Title 46, Chapter 1, Part 162 Subpart 050) – Pollution Prevention Equipment	COR 529-2	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr162_06.html
46 CFR 164.009 (Title 46, Chapter 1, Part 164 Subpart 009) – Noncombustible Materials For Merchant Vessels	COR 509-3	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr164_06.html
46 CFR 171.015 (Title 46, Chapter 1, Part 171 Subpart 015) – Location of margin line	COR 079-3	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr171_06.html
46 CFR 195.19 (Title 46, Chapter 1, Part 195, Section 19) – Magnetic Compass and Gyrocompass	COR 437-2	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr195_06.html
46 CFR 196.40-10 (Title 46, Chapter1, Part 196 Subpart 40, Section 10) – Draft marks and draft indicating systems	COR 603-1	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfr196_06.html

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46 CFR Subchapter J (Title 46, Chapter 1, Parts 110 through 113) – Electrical Engineering	COR: 300-2 300-2 302-3 302-3 304-2 320-3 320-5 324-1 330-3 413-1 422-2 430-1 437-4	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfrv4_06.html
46 CFR Subchapter K (Title 46, Chapter 1, Parts 114 through 122) – Small Passenger Vessels Carrying More than 150 Passengers or With Overnight Accommodations for More than 49 Passengers	COR: 583-3	01 Oct 2006	http://www.access.gpo.gov/nara/cfr/waisidx_06/46cfrv4_06.html

Authority: General Services Administration, Department of Defense, National Aeronautics and Space Administration

Title: Federal Acquisition Regulation (FAR)

Webpage: <http://www.arnet.gov/far/>, or <http://farsite.hill.af.mil/VFFARa.htm>,

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FAR 3.104 – Procurement integrity	L.10.2		http://www.arnet.gov/far/current/html/Subpart%203_1.html#wp1139280
FAR Subpart 9.1 – Responsible Prospective Contractors	M.2.1		http://www.arnet.gov/far/current/html/Subpart%209_1.html#wp1084058
FAR Subpart 9.5 – Organizational and Consultant Conflicts of Interest	H.27.1		http://www.arnet.gov/far/current/html/Subpart%209_5.html#wp1078823
FAR Subpart 15.5 – Preaward, Award, and Postaward Notifications, Protests, and Mistakes	L.11.1		http://www.arnet.gov/far/current/html/Subpart%2015_5.html#wp1095192
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FAR 15.406-1(b) – Prenegotiation objectives.	H.15		http://www.arnet.gov/far/current/html/Subpart%2015_4.html#wp1208600
FAR 15.408(k) – Solicitation provisions and contract clauses - Notification of Ownership Changes	I.6		http://www.arnet.gov/far/current/html/Subpart%2015_4.html#wp1208757
FAR 15.506 – Postaward debriefing of offerors	H.20.1	Mar 2007	http://www.arnet.gov/far/current/html/Subpart%2015_5.html#wp1095245
FAR 17.206(b) – Evaluation	M.5		http://www.arnet.gov/far/current/html/Subpart%2017_2.html#wp1078150
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FAR 52.202-1 – Definitions	I.1.1	Jul 2004	http://www.arnet.gov/far/current/html/52_200_206.html#wp1137572
FAR 52.203-2 – Certificate of Independent Price Determination	K.2	Apr 1985	http://www.arnet.gov/far/current/html/52_200_206.html#wp1137583
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FAR 52.203-8 – Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	I.1.1	Jan 1997	http://www.arnet.gov/far/current/html/52_200_206.html#wp1137653
FAR 52.203-10 – Price or Fee Adjustment for Illegal or Improper Activity	I.1.1	Jan 1997	http://www.arnet.gov/far/current/html/52_200_206.html#wp1137667
FAR 52.203-11 – Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions	K.1	Sep 2005	http://www.arnet.gov/far/current/html/52_200_206.html#wp1137684
FAR 52.203-12 – Limitation on Payments to Influence Certain Federal Transactions	I.1.1	Sep 2005	http://www.arnet.gov/far/current/html/52_200_206.html#wp1138380
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FAR 52.204-7 – Central Contractor Registration	I.1.1	Jul 2006	http://www.arnet.gov/far/current/html/52_200_206.html#wp1137850
FAR 52.207-4 – Economic Purchase Quantity – Supplies	K.6	Aug 1987	http://www.arnet.gov/far/current/html/52_207_211.html#wp1140736
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FAR 52.211-1 – Availability of Specifications Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29	L.2	Aug 1998	http://www.arnet.gov/far/current/html/52_207_211.html#wp1140938
FAR 52.211-2 – Availability of Specifications, Standards, and Data Item Descriptions Listed in the Acquisition Streamlining and Standardization Information System (ASSIST)	L.3	Jan 2006	http://www.arnet.gov/far/current/html/52_207_211.html#wp1143389
FAR 52.211-3 – Availability of Specifications Not Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions	L.4	Jun 1988	http://www.arnet.gov/far/current/html/52_207_211.html#wp1140955
FAR 52.211-5 – Material Requirements	I.1.1	Aug 2000	http://www.arnet.gov/far/current/html/52_207_211.html#wp1140975
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FAR 52.215-8 – Order of Precedence—Uniform Contract Format	I.1.1 Section J, Att 4, para 2.1 Section J, Att 6, para 2.1	Oct 1997	http://www.arnet.gov/far/current/html/52_215.html#wp1144555
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FAR 52.219-4 – Notice of Price Evaluation Preference for HUBZone Small Business Concerns	I.1.1 M.4	Jul 2005	http://www.arnet.gov/far/current/html/52_217_221.html#wp1135970
FAR 52.219-8 – Utilization of Small Business Concerns	I.1.1	May 2004	http://www.arnet.gov/far/current/html/52_217_221.html#wp1136032
FAR 52.219-9 Alternate II – Small Business Subcontracting Plan	I.1.1	Oct 2001	http://www.arnet.gov/far/current/html/52_217_221.html#wp1136058
FAR 52.219-14 – Limitations on Subcontracting	I.1.1	Dec 1996	http://www.arnet.gov/far/current/html/52_217_221.html#wp1136175
FAR 52.219-16 – Liquidated Damages—Subcontracting Plan	I.1.1	Jan 1999	http://www.arnet.gov/far/current/html/52_217_221.html#wp1136186
FAR 52.219-23 – Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns	I.1.1 M.4 M.4	Sep 2005	http://www.arnet.gov/far/current/html/52_217_221.html#wp1136333

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FAR 52.222-35 – Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	I.1.1	Sep 2006	http://www.arnet.gov/far/current/html/52_222.html#wp1148042
FAR 52.222-36 – Affirmative Action for Workers with Disabilities	I.1.1	Jun 1998	http://www.arnet.gov/far/current/html/52_222.html#wp1148097
FAR 52.222-37 – Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	I.1.1	Sep 2006	http://www.arnet.gov/far/current/html/52_222.html#wp1148123
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FAR 52.223-3 – Hazardous Material Identification and Material Safety Data	I.1.1	Jan 1997	http://www.arnet.gov/far/current/html/52_223_226.html#wp1168787
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FAR 52.227-2 – Notice and Assistance Regarding Patent and Copyright Infringement	I.1.1	Aug 1996	http://www.arnet.gov/far/current/html/52_227.html#wp1139074
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FAR 52.230-6 – Administration of Cost Accounting Standards	I.1.1	Apr 2005	http://www.arnet.gov/far/current/html/52_228_231.html#wp1137876
FAR 52.232-1 – Payments	I.1.1	Apr 1984	http://www.arnet.gov/far/current/html/52_232.html#wp1152483
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FAR 52.233-2 – Service of Protest	L.7	Sept 2006	http://www.arnet.gov/far/current/html/52_233_240.html#wp1113323
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FAR 52.246-3 – Inspection of Supplies – Cost-Reimbursement	E.1.1 H.27.1	May 2001	http://www.arnet.gov/far/current/html/52_246.html#wp1118742
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FAR 52.246-23 – Limitation of Liability	I.1.1	Feb 1997	http://www.arnet.gov/far/current/html/52_246.html#wp1119101
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FAR 52.247-30 – F.o.b. Origin, Contractor's Facility	F.1.1	Feb 2006	http://www.arnet.gov/far/current/html/52_247.html#wp1155672
FAR 52.247-34 – F.o.b. Destination	F.1.1	Nov 1991	http://www.arnet.gov/far/current/html/52_247.html#wp1155803

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FAR 52.249-14 – Excusable Delays	I.1.1	Apr 1984	http://www.arnet.gov/far/current/html/52_248_253.html#wp1119992
FAR 52.251-1 – Government Supply Sources	I.1.1	Apr 1984	http://www.arnet.gov/far/current/html/52_248_253.html#wp1120030
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Authority: Office of the Law Revision Counsel of the U.S. House of Representatives**Title:** United States Code (USC)**Address:** The Superintendent of Documents, U.S. Government Printing Office

732 N. Capitol Street, NW ·

Washington, DC 20401

Phone: (866)512-1800 or (202)512-1800**Fax:** Fax (202)512-2250**Website:** <http://bookstore.gpo.gov><http://uscode.house.gov/search/criteria.shtml><http://www.gpoaccess.gov/uscode/index.html>

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14 U.S.C. 665 (Title 14, Part I, Chapter 17, Section 665) -	H.22	2000	http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+14USC665
22 U.S.C. Sec 2751 (Title 22, Chapter 39, Subchapter I, Section 2751) - Arms Export Control Act.	COR 042-6	2000	http://www.access.gpo.gov/uscode/title22/chapter39_.html
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Authority: U.S. Coast Guard (USCG)
Address: Coast Guard Headquarters
 Commandant, U.S. Coast Guard,
 2100 Second Street, SW,
 Washington, DC 20593
Website: www.uscg.mil

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COMDTINST 1500.23 – U.S. Coast Guard Philosophy on Training, Education, and Development	COR 089-1	29 Jul 1994	COMDTINST 1500.23
COMDTINST 1550.23 – Training Evaluation Policy	COR 089-1	28 Jul 1998	COMDTINST 1550.23
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COMDTINST M6240.4A – Food Service Sanitation Manual	COR 651-1	31 Aug 1993	COMDTINST M6240.4A
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OPNAVINST 5100.19 – Navy Safety Precautions For Forces Afloat	COR 403-4	30 Aug 2001	http://www.safetycenter.navy.mil/instructions/afloat/510019D.htm
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SL740-AA-MAN-010 – U.S. Navy Towing Manual	COR 582-1	1 Jul 2002	http://www.supsalv.org/pdf/towman.pdf

Authority: Naval Sea Systems Command (NAVSEA)

Address: Naval Sea Systems Command
1333 Isaac Hull Avenue S. E.
Washington Navy Yard, D.C. - 20376

Phone: (202) 781-0000

Website: <http://www.navsea.navy.mil/>

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NAVSEA 0967-LP-177-3020 – Shipboard Communications Antenna Systems, Technical Manual, Volume 2, Revision 1” and add the date “1 Nov 1980	COR 405-4	1 Nov 1980	To be provided as GFI
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NAVSEA 0938-LP-018-0010 – Heating, Ventilation and Air Conditioning Design Criteria Manual for Surface Ships of the United States Navy	COR 512-3	29 Mar 1991	To be provided as GFI
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NAVSEA Drawing No. 8180359 – Table Base Assy	COR 700-2		To be provided as GFI
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NAVSEA Drawing No. 804-4759441, Rev A – Gear, Emergency Towing Assy – 5 Inch Thru 14 Inch CRCMF Synthetic Rope Towing Hawser	COR 582-3	08 May 1974	804-4759441
NAVSEA Drawing No. 804-5184210 – Locker .50 caliber ammunition	COR 700-5	23 Nov 1981	To be provided as GFI
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NAVSEAINST 8020.6D – Navy Weapon System Safety Program	COR 077-1	15 Jan 97	http://akss.dau.mil/docs/08020-006D.doc

Authority: National Security Agency (NSA)
Address: Fort George G. Meade MD, 20755
Phone: (301)688-6524
Website: <http://www.nsa.gov/>

Title	Location	Date	Link
NSTISSAM TEMPEST/2-95 – RED/BLACK Installation Guidance	COR: 202-2 400-3 440-20	12 Dec 1995 Amend. 3 Feb 2000	TEMPEST/2-95

Authority: North American Treaty Organization (NATO)

Address: NATO Headquarters
Blvd Leopold III
1110 Brussels, Belgium

E-Mail: natodoc@hq.nato.int

Website: <http://www.nato.int/>

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NATO ANEP-70 – Guidance for Naval Surface Ships Mission Oriented Manoeuvring Requirements-ED 1	COR 070-2	1 Sep 2003	http://store.ihs.com/specsstore/controller?event=DOCUMENT_DETAILS&docId=WESSIBAAAAAAAAA

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Authority: American Boat & Yacht Council
Title: Standards and Technical Information Reports for Small Craft
Address: ABYC
 613 Third Street, Suite 10
 Annapolis, MD 21403
Phone: 410-990-4460
Fax: 410-990-4466
Website: <http://www.abycinc.org/>

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Authority: International Organization for Standardization (ISO)**Address:** International Organization for Standardization (ISO)

1, ch. de la Voie-Creuse, Case postale 56

CH-1211 Geneva 20,

Switzerland

Phone: +41 22 749 01 11**Fax:** +41 22 733 34 30**Website:** <http://www.iso.ch/iso/en/ISOOnline.frontpage>

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ISO 3046/1 – Reciprocating internal combustion engines -- Performance -- Part 1: Declarations of power, fuel and lubricating oil consumptions, and test methods -- Additional requirements for engines for general use	COR: 233-1	2002	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=28330&ICS1=27&ICS2=20&ICS3=
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ISO 4863 – Resilient shaft couplings -- Information to be supplied by users and manufacturers	COR 242-1	1984	http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=10843&ICS1=21&ICS2=120&ICS3=20
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ISO 10303 – STandard for the Exchange of Product model data (STEP)	COR 085-11		http://www.tc184-sc4.org/SC4_Open/SC4%20Legacy%20Products%20(2001-08)/STEP_(10303)/
ISO 13407 – Human-centered design processes for interactive systems	COR 086-2	1999	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=21197&ICS1=13&ICS2=180&ICS3=
ISO 15550 – Internal combustion engines -- Determination and method for the measurement of engine power -- General requirements	COR 502-1	2002	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=28185&ICS1=27&ICS2=20&ICS3=
ISO 16982 – Ergonomics of human-system interaction -- Usability methods supporting human-centered design	COR 086-2	2002	http://www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=31176&ICS1=13&ICS2=180&ICS3=

Authority: The Society of Naval Architects and Marine Engineers (SNAME)
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Title	Location	Date	Link
SNAME Ship Technical Operation Bulletin 4-7 – Thermal Insulation Report	COR 512-3	1963	http://www.sname.org/publications/cats_eearch.pl?start=0&tofound=0&page=1&queryby=C&category=Technical+%26+Research+Publications%3A+Ship+Technical+Operations+Bulletins&btn=Go
SNAME T&R Bulletin 2-29A – Measurement and Evaluation of Structural & Machinery Vibration in Ships	COR 073-4 200-2 568-1	2004	http://www.sname.org/publications/cats_eearch.pl?start=0&tofound=0&page=1&queryby=C&category=Technical+%26+Research+Publications%3A+Hull+Structure+Bulletins&btn=Go
SNAME T&R Bulletin 3-37 – Design Guide for Shipboard Airborne Noise Control	COR 073-2	1983	http://www.sname.org/publications/cats_eearch.pl?start=0&tofound=0&page=1&queryby=C&category=Technical+%26+Research+Publications%3A+Ships+Machinery+Bulletins&btn=Go
SNAME T&R Bulletin 3-39 – Guide for Shop and Installation Tests	COR 556-7	1985	http://www.sname.org/publications/cats_eearch.pl?start=0&tofound=0&page=1&queryby=C&category=Technical+%26+Research+Publications%3A+Ships+Machinery+Bulletins&btn=Go
Marine Engineering	COR 505-1	1992	http://www.sname.org/publications/cats_eearch.pl?start=0&tofound=0&page=1&queryby=W&words=marine+engineering&btn=Search

Authority: ASTM International (ASTM) American Society for Testing and Materials
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A53/A53M-06a Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless	COR 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A53A53M.htm
A106/A106M-06a Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service	COR 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A106A106M.htm
A109/A109M-03 Standard Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled	COR 078-2	2003	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A109A109M.htm
A131/A131M-04ae1 Standard Specification for Structural Steel for Ships	COR 078-2	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A131A131M.htm
A153/A153M-05 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware	COR 078-4	2005	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A153A153M.htm
A276-06 Standard Specification for Stainless Steel Bars and Shapes	COR 583-1	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A276.htm
A312/A312M-06 Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	COR 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A312A312M.htm
A564/A564M-04 Standard Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes	COR 243-2	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A564A564M.htm
A572/A572M-06 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel	COR 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A572A572M.htm
A588/A588M-05 Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi [345 MPa] Minimum Yield Point to 4-in. [100-mm] Thick	COR 078-2	2005	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A588A588M.htm
A607-98 Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Columbium or Vanadium, or Both, Hot-Rolled and Cold-Rolled (Withdrawn 2000)	COR 078-2	1998	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A607.htm
A668/A668M-04 Standard Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use	COR 078-2	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A668A668M.htm
ASTM A959-04 Standard Guide for Specifying Harmonized Standard Grade Compositions for Wrought Stainless Steels	COR 651-1	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/A959.htm?E+mystore

Title	Location	Date	Link
B111/B111M-04 Standard Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock	COR 078-2	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B111B111M.htm
B179-06 Standard Specification for Aluminum Alloys in Ingot and Molten Forms for Castings from All Casting Processes	COR 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B179.htm
B122/B122M-06 Standard Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar	COR 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B122B122M.htm
B164-03 Standard Specification for Nickel-Copper Alloy Rod, Bar, and Wire	COR 078-2	2003	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B164.htm
B209-06 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate	COR: 651-1 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B209.htm
B221-06 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes	COR: 651-1 078-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B221.htm
B241/B241M-02 Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube	COR 078-2	2002	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/B241B241M.htm
B418 Standard Specification for Cast and Wrought Galvanic Zinc Anodes	COR 633-1	2006	www.astm.org/DATABASE.CART/REDLINE_PAGES/B418.htm
D2563-94(2002)e1 Standard Practice for Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts	COR 070-8	2002	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/D2563.htm
D3951-98 Standard Practice for Commercial Packaging	COR 083-8	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/D3846.htm
E84-06a Standard Test Method for Surface Burning Characteristics of Building Materials	COR 509-1	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/E84.htm
F683-03a Standard Practice for Selection and Application of Thermal Insulation for Piping and Machinery	COR 509-1	2003	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F683.htm
F704-81 Standard Practice for Selecting Bolting Lengths for Piping System Flanged Joints	COR 505-3	2001	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F704.htm
F708-92 Standard Practice for Design and Installation of Rigid Pipe Hangers	COR 505-1	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F708.htm
F783-88 Standard Specification for Staple, Handgrab, Handle, and Stirrup Rung	COR 623-6	2003	www.astm.org/DATABASE.CART/REDLINE_PAGES/F783.htm
F841-84 Standard Specification for Thrusters, Tunnel, Permanently Installed in Marine Vessels	COR 568-1	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F841.htm
F856-97 Standard Practice for Mechanical Symbols, Shipboard—Heating, Ventilation, and Air Conditioning (HVAC)	COR 512-3	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F856.htm

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F956-91 Standard Specification for Bell, Cast, Sound Signaling	COR 443-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F956.htm
F986-86 Standard Specification for Suction Strainer Boxes	COR 529-1	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F986.htm
F992-86 Standard Specification for Valve Label Plates	COR 507-4	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F992.htm
F993-86 Standard Specification for Valve Locking Devices	COR 505-3	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F993.htm
F998 Standard Specification for Centrifugal Pump, Shipboard Use	COR 503-1	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F998.htm
F1000-95 (withdrawn without replacement) Standard Practice for Piping System Drawing Symbols	COR 505-1	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1000.htm
F1099M-98 Standard Specification for Rat Guards, Ship's (Metric)	COR 605-2	2005	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1099M.htm
F1106-87 Standard Specification for Warping Heads, Rope Handling (Gypsy Head, Capstan Head)	COR: 581-1 582-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1106.htm
F1120-87 Standard Specification for Circular Metallic Bellows Type Expansion Joints for Piping Applications	COR 259-2	2004	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1120.htm
F1138-98 Standard Specification for Spray Shields for Mechanical Joints	COR 508-2	2003	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1138.htm
F1166-95a Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities	COR: 070-9 071-8 073-2 088-1 088-2 088-3 088-5 088-7 088-8 167-2 167-4 400-3 401-3 410-2 425-2 502-10 504-1 505-3 602-2 611-1 623-1 663-2	2007	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1166.htm

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F1182-90 Standard Specification for Anodes, Sacrificial Zinc Alloy	COR: 516-3 633-1	2006	www.astm.org/DATABASE.CART/REDLINE_PAGES/F1182.htm
F1198-92 Standard Guide for Shipboard Fire Detection Systems	COR 436-2	2002	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1198.htm
F1387-99 Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings	COR 556-4	2005	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1387.htm
F1332-93 Standard Practice for Use of SI (Metric) Units in Maritime Applications	COR 070-10	2005	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1332.htm
F1337-91 Standard Practice for Human Engineering Program Requirements for Ships and Marine Systems, Equipment, and Facilities	COR 088-1	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1337.htm
F1511-06 Standard Specification for Mechanical Seals for Shipboard Pump Applications	COR 503-2	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1511.htm
F1718-01(2006) Standard Specification for Rotary Positive Displacement Distillate Fuel Pumps	COR: 503-1	2006	http://www.astm.org/DATABASE.CART/REDLINE_PAGES/F1718.htm
ASTM/SAE Nickel Aluminum Bronze UNS No. C95800	COR 245-3		http://www.matweb.com/search/SpecificMaterial.asp?bassnum=MCUDDH

Authority: The American Bureau of Shipping (ABS)
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 16855 Northchase Drive
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Fax: (281)877-6201
Website: <http://www.eagle.org/>

Title	Location	Date	Link
Guide for Bridge Design and Navigational Equipment/Systems – ABS Publication #94	COR 410-3	Jan 2000 (updated Jun 2002)	http://www.eagle.org/absdownloads/listdetails.cfm?id=152
Guide for Building and Classing High Speed Naval Craft (HSNC) – ABS Publication #109	COR: 070-1 070-2 070-8 074-2 074-7 074-8 100-1 100-5 100-6 130-1 233-1 233-2 245-1 300-1 310-2 313-2 320-4 400-1 400-3 500-1 502-1 505-2 505-3 506-1 529-1 541-2 551-3 581-1 582-1	Jan 2007	http://www.eagle.org/absdownloads/listdetails.cfm?id=351
Naval Vessel Rules (NVR)	070-2 233-1 233-2 233-10 233-12 233-13 241-1 243-1 244-1 244-2	2006	

Title	Location	Date	Link
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USCG Appendix to NVR	070-2 233-1 243-1	Oct 2004	USCG Appendix to NVR
Guide for Crew Habitability on Ships – ABS Publication #102	COR: 070-9 088-1	01 Dec 2003	http://www.eagle.org/absdownloads/

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Webpage: <http://www.asme.org/>

Title	Location	Date	Link
International Boiler And Pressure Vessel Code	COR 505-1 COR 551-3	2004	http://www.asme.org/Codes/Publications/BPVC/Boiler_Pressure_Vessels_Code.cfm
BPVC Section VIII- Rules for Construction of Pressure Vessels Division 1	COR 256-1	2004	http://catalog.asme.org/Codes/PrintBook/BPVCVIII_2004_BPVC_Section.cfm
B16.5 – 2003 Pipe Flanges and Flanged Fittings: NPS 1/2 through 24	COR 503-1 541-3	2003	http://catalog.asme.org/Codes/PrintBook/B165_2003_Pipe_Flanges.cfm
B16.24 – 2001 Cast Copper Alloy Pipe Flanges and Flanged Fittings: Class 150, 300, 400, 600, 900, 1500 and 2500	COR 503-1	2001	http://catalog.asme.org/Codes/PrintBook/B1624_2001_Cast_Copper_Alloy.cfm
B18.22.1– 1965 Plain Washers	COR 075-1	1965	http://catalog.asme.org/Codes/PrintBook/B18221_1965_Plain_Washers.cfm
B40.100 – Pressure Gauges and Gauge Attachments	COR 504-3	2005	http://catalog.asme.org/Codes/PrintBook/B40100_2005_Pressure_Gauges.cfm
B46.1 – Surface Texture, Surface Roughness, Waviness, and Lay	COR: 070-8 562-2	2002	http://catalog.asme.org/Codes/PrintBook/B461_2002_Surface_Texture.cfm
Y14.34M – Associated Lists	C.16.3	1996	http://catalog.asme.org/Codes/PrintBook/Y1434M_1996_Associated_Lists.cfm
Y14.35M – Revision of Engineering Drawings and Associated Documents	C.16.3	1997	http://catalog.asme.org/Codes/PrintBook/Y1435M_1997_Revision_Drawings.cfm
Y14.41 – Digital Product Definition Data Practices	C.16.3	2003	http://catalog.asme.org/Codes/PrintBook/Y1441_2003_Digital_Product.cfm
ANSI/ASME Y14.100 – Engineering Drawing Practices	C.16.3	2004	http://catalog.asme.org/Codes/PrintBook/Y14100_2004_Drawing_Practices.cfm
Y32.10 – Graphic Symbols for Fluid Power Diagrams	COR 556-6	1967	http://store.asme.org/product.asp?catalog_name=Codes%20and%20Standards&category_name=Graphic%20Symbols%20Standards&product_id=N0002S

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Warrendale, PA 15096-0001**Phone:** 877-606-7323**Website:** <http://www.sae.org/>

Title	Location	Date	Link
AS1290 – Graphic Symbols for Aircraft Hydraulic and Pneumatic Systems	COR 556-6	May 1986	http://www.sae.org/technical/standards/AS1290A
Standard J534 – Lubrication Fittings	COR 540-2	July 1998	http://www.sae.org/technical/standards/J534_199807
Standard J578 – Color Specification	COR 330-2.5	Dec 2006	http://www.sae.org/technical/standards/J578_200612
Standard J1273 – Recommended Practices for Hydraulic Hose Assemblies	COR 505-2	Aug 2004	http://www.sae.org/technical/standards/J1273_200408
Standard J1779 – Ship Systems and Equipment - Hydraulic System Design Criteria for Marine Vehicles	COR 556-8	Aug 2003	http://www.sae.org/technical/standards/J1779_200308
Standard J1780 – Hydraulic System Diagrams and Associated Tables for Marine Vehicles	COR 556-6	Apr 1991	http://www.sae.org/technical/standards/J1780_199104
Standard J1782 – Ship Systems and Equipment - Hydraulic Systems - Noise Control	COR 556-2	Nov 2006	http://www.sae.org/technical/standards/J1782_200611
Standard J1784 – (Canceled) Specifications and Standards for Marine Hydraulic Systems and Components	COR 556-1	Aug 2000	http://www.sae.org/technical/standards/J1784_200008
Standard J1942/1– Qualified Hoses for Marine Applications	COR 505-2	Sep 2005	http://www.sae.org/technical/standards/J1942/1_200506
Standard J2270 – Ship Systems and Equipment--Threaded Fasteners--Inspection, Test, and Installation Requirements	COR 075-1	Jun 2003	http://www.sae.org/technical/standards/J2270_200306
Standard J2280 – Ship Systems and Equipment--Fasteners--Selection and Identification Requirements	COR 075-1	Apr 1996	http://www.sae.org/technical/standards/J2280_199604
Standard J2295 – Fastener Part Standard - Cap Screws, Hex Bolts, and Hex Nuts (Inch Dimensioned)	COR 075-1	May 2006	http://www.sae.org/technical/standards/J2295_200605
Standard J2321 – Ship Systems and Equipment-- General Specification for Filter Elements--Hydraulic and Lube Oil Service	COR 556-5	Dec 2002	http://www.sae.org/technical/standards/J2321_200212
Standard J2321/1 – Disposable Hydraulic Filter Element--115 L/min Flow, 1.0 MPa Collapse Pressure, Filtration Ratio = 75 at 6 and 10 µm	COR 556-5	Jan 2006	http://www.sae.org/technical/standards/J2321/1_200601
AMSQQA 200/5 – Aluminum Alloy 5086, Bar, Rod, Shapes, Tube, and Wire, Extruded	COR 651-1	July 1997	http://www.sae.org/technical/standards/AMSQQA200/5

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AMSQQA 250/8A – Aluminum Alloy 5052, Plate and Sheet	COR 078-2 651-1	Sep 1998	http://www.sae.org/technical/standards/AMSQQA250/8A
AMS 3901 – Yarn and Rowing, Organic Fiber (PARA-ARAMID), High Modulus	COR: 612-1 078-3	Sep 1998	http://www.sae.org/technical/standards/AMS3901C
AMS-C-81986 – Core Material, Plastic Honeycomb, Nylon Paper Base; for Aircraft Structural Applications	COR 621-1	Jul 1998	http://www.sae.org/technical/standards/AMSC81986
SAE-AMS-STD-401 – Sandwich Constructions and Core Materials; General Test Methods	COR 621-1	Jun 1999	http://www.sae.org/technical/standards/AMSSTD401

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NEMA 250-2003 – Enclosures for Electrical Equipment (1000 Volts Maximum).	COR: 433-3 504-4	2003	http://www.nema.org/stds/250.cfm
ANSI/NEMA MG 1– Motors and Generators	COR: 302-2 310-2	2006	http://www.nema.org/stds/mg1.cfm
NEMA IA 2.1 – Programmable Controllers— Part 1: General Information	COR 324-1	2005	http://www.nema.org/stds/ia2-1.cfm
NEMA IA 2.2 – Programmable Controllers— Part 2: Equipment Requirements and Test	COR 324-1	2005	http://www.nema.org/stds/ia2-2.cfm
NEMA IA 2.3 – Programmable Controllers— Part 3: Programming Languages	COR 324-1	2005	http://www.nema.org/stds/ia2-3.cfm
NEMA-STD-PE1 – Uninterruptible Power Systems (UPS)—Specification and Performance Verification	COR 314-3	2003	http://www.nema.org/stds/pe1.cfm
NEMA ICS 6 – Industrial Control and Systems: Enclosures	COR 400-3	1993 (R2001, R2006)	http://www.nema.org/stds/ics6.cfm#download

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Title	Location	Date	Link
B2.4 – AWS B2.4 Specification for Welding Procedure and Performance Qualification for Thermoplastics	COR 533-5	2006	http://webstore.ansi.org/ansidocstore/product.asp?sku=AWS+B2%2E4%2D2006
C39.1 – Electrical Analog Indicating Instruments, Requirements for	COR 504-1	1981(R1992)	http://www.techstreet.com/cgi-bin/detail?product_id=17382
S1.4-1983 (R2006)/ANSI S1.4a-1985 (R2006) – American National Standard Specification for Sound Level Meters	COR: 073-1	2006	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI+S1%2E4%2D1983+%28R2006%29%2FANSI+S1%2E4a%2D1985+%28R2006%29
S2.19 – Mechanical Vibration - Balance Quality Requirements of Rigid Motors - Part 1: Determination of Possible Unbalance, Including Marine Applications	COR 073-7	1999 (R2004)	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI+S2%2E19%2D1999+%28R2004%29
S2.25 – Guide for the Measurement, Reporting, and Evaluation of Hull and Superstructure Vibration in Ships	COR: 073-4 568-1	2004	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI+S2%2E25%2D2004
S2.26 – American National Standard Vibration Testing Requirements and Acceptance Criteria for Shipboard Equipment	COR 073-8	2001 (R2006)	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI+S2%2E26%2D2001+%28R2006%29
S2.27 – American National Standard Guidelines for the Measurement and Evaluation of Vibration of Ship Propulsion Machinery	COR: 073-4 200-2 568-1	2002	http://asastore.aip.org/shop.do?cID=8&pID=36
Z358.1 – Emergency Eyewash and Shower Equipment	644-2	2004	http://www.techstreet.com/cgi-bin/detail?product_id=1141825
ANSI Z535.1 – Safety Color Code	COR 403-1	2006	http://www.nema.org/stds/z535-1.cfm
ANSI/EIA 649A – National Consensus Standard for Configuration Management	COR 041-1	2004	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI%2FEIA%2D649%2DA+2004
ANSI/GEIA EIA-632 – Processes for Engineering a System	COR 068-1	2003	http://www.techstreet.com/cgi-bin/detail?product_id=1145585
ANSI/ASHRAE 26 – Mechanical Refrigeration and Air-Conditioning Installations Aboard Ship	COR 516-3	1996	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI%2FASHRAE+26%2D1996+%28RA+2006%29

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ANSI/ASHRAE 34 – Designation and Safety Classification of Refrigerants And Addenda Supplement to ANSI/ASHRAE 34-2004	COR 516-2	2004	http://webstore.ansi.org/ansidocstore/product.asp?sku=ANSI%2FASHRAE+34%2D2004 And http://ftp2.ansi.org/download/free_download.asp?document=ANSI%2FASHRAE+34%2D2004+Addenda+Supplement
ANSI/TIA/EIA-526-14-A – OFSTP-14 – Optical Power Loss Measurement of Installed Multimode Fibre Cable Plant	COR 412-2	1998	http://www.tia.org.uk/coc/882002%20Publications%20list.pdf

Authority: The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
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ASHRAE Handbook – HVAC Applications	COR 073-2	2003	http://resourcecenter.ashrae.org/store/ashrae/newstore.cgi?itemid=17141&view=item&page=1&loginid=13573366&priority=cat146egory&words=Heating%2C%20Ventilating%20and%20Air%20Conditioning%20Applications&method=and&

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Phone: (703)281 6613
Fax: (703)281-6671
Website: <http://www.mss-hq.com>

Title	Location	Date	Link
MSS SP-58-2002 – Pipe Hangers and Supports - Materials, Design, and Manufacture	COR 505-1	2002	http://www.mss-hq.com/price_list.cfm
MSS-SP-119-2003 – Factory-Made Wrought Belled End Socket-Welding Fittings	COR 505-2	2003	http://www.mss-hq.com/price_list.cfm

Authority: National Fire Protection Association (NFPA)
Address: 1 Batterymarch Park
 Quincy, MA
 USA 02169-7471
Tel: (617)770-3000
Fax: (617)770-0700
Website: <http://www.nfpa.org/>

Title	Location	Date	Link
NFPA 13 – Installation of Sprinkler Systems, 2007 edition	COR 521-5	2007	http://www.nfpa.org/catalog/product.asp?pid=1307
NFPA 17A – Standard for Wet Chemical Extinguishing Systems	COR 555-4	2002	http://www.nfpa.org/catalog/product.asp?pid=17A02
NFPA 70 – National Electrical Code (NEC)	COR 303-2.1	2005	http://www.nfpa.org/catalog/product.asp?pid=70HB05
NFPA 72 – National Fire Alarm Code	COR 436-2	2007	http://www.nfpa.org/catalog/product.asp?pid=7207
NFPA 101 – Life Safety Code	COR 087-3	2006	http://www.nfpa.org/catalog/product.asp?pid=10106
ANSI/(NFPA)T2.6.1 R2 – Fluid power components - Method for verifying the fatigue and establishing the burst pressure ratings of the pressure containing envelope of a metal fluid power component	COR 556-5	2001 (R2005)	http://store.nfpa.com/proddetail.asp?prod=ANSI%2F%28NFPA%29T2%2E6%2E1+R2%2D2001+%28R2005%29
ANSI/(NFPA)T3.9.17 R2 – Hydraulic fluid power – Positive displacement pumps, motors and integral transmissions – Method of testing and presenting basic performance data	COR 556-5	1997 (R2004)	http://store.nfpa.com/proddetail.asp?prod=ANSI%2F%28NFPA%29T3%2E9%2E17+R2%2D1997+%28R2004%29
ANSI/(NFPA)T3.9.22 R2 – Pump/motor – Pressure rating supplement to NFPA/T2.6.1 R2-2000 (R2005), Fluid power components – Method for verifying the fatigue and establishing the burst pressure ratings of the pressure containing envelope of a metal fluid power pump and motor	COR 556-5	2000 (R2005)	http://store.nfpa.com/proddetail.asp?prod=ANSI%2F%28NFPA%29T3%2E9%2E22+R2%2D2000+%28R2005%29%2D2

Authority: Aerospace Industries Association
Address: 1000 Wilson Boulevard, Suite 1700
Arlington, VA 22209-3901
Phone: (703) 358-1000
Website: <http://www.aia-aerospace.org/>

Authority: AeroSpace and Defence Industries Association of Europe
Address: 270 Avenue de Tervuren
B-1150 Brussels
Belgium
Phone: +32 2 775 81-10
Fax: +32 2 775 81-12
Website: <http://www.asd-europe.org/>

Title	Location	Date	Link
International specification for technical publications utilizing a common source database, S1000D Issue 2.3	COR 086-2	1 May 2005	http://www.s1000d.org/

Authority: Institute of Electrical and Electronics Engineers, Inc (IEEE)
Address: 3 Park Avenue
 New York, New York, 17th Floor - 10016-5997
Phone: (212) 419-7900
Fax: (212) 752-4929
Website: www.ieee.org
<http://standards.ieee.org/>

Title	Location	Date	Link
45 - IEEE Recommended Practice for Electric Installations on Shipboard	COR: 095-11 095-11 202-2 233-8 300-2 300-2 300-2 300-2 300-3 300-6 302-2 302-3 302-4 303-2 304-2 305-1 310-2 310-3 313-2 313-3 314-3 320-3 320-4 320-5 324-1 400-2 413-1 422-4 430-1 432-2 436-2 437-2 437-4	2002	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95035
100 - The Authoritative Dictionary of IEEE Standards Terms 7th Edition	COR 300-2	2000	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SH95291
141 - RED BOOK IEEE Recommended Practice for Electric Power Distribution for Industrial Plants - Red Book	COR 300-2	1993	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS16477
242 - BUFF BOOK IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems	COR: 300-2.4 303-2.1	2001	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS94930

Title	Location	Date	Link
485 - IEEE Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications	COR 313-2 313-3	1997(R2003)	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS94522
519 - IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems	COR: 314-2 320-1	1992	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS15453
944 - (Withdrawn) IEEE Recommended Practice for the Application and Testing of Uninterruptible Power Supplies for Power Generating Stations	COR 314-3	1986	http://shop.ieee.org/ieeestore/Product.aspx?product_no=WE10561
1012 - IEEE Standard for Software Verification and Validation	COR 202-2	2004	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95308
C37.20.1A - IEEE Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear-	COR: 324-1	2005 Amend. 1	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95379
Amendment 1: Short-Time and Short-Circuit Withstand Current Tests-Minimum Areas for Multiple Cable Connections		2002	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95004
C37.21 - IEEE Standard for Control Switchboards	COR 324-1	2005	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95353
C57.12.01 - IEEE Standard for General Requirements for Dry-Type Distribution and Power Transformers Including Those with Solid-Cast and/or Resin Encapsulated Windings	COR 314-3	2005	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95368
C95.1 - IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz	COR 400-3 405-3	2005	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS95389
ANSI/IEEE Standards C37 Series – Symmetrical Current Basis	COR 300-2		http://standards.ieee.org/reading/ieee/std_public/description/relaying/
Guide IEEE/EIA 12207.2 – Industry Implementation of International Standard ISO/IEC 12207: 1995 (ISO/IEC 12207) Standard for Information Technology-- Software life cycle processes--Implementation considerations	COR 202-2	1997	http://shop.ieee.org/ieeestore/Product.aspx?product_no=SS94597

Authority: The Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
Address: 4201 Lafayette Center Drive Chantilly
 Virginia 20151-1209
Phone: (703) 803-2980
Fax: (703) 803-3732
Website: <http://www.smacna.org/>

Title	Location	Date	Link
AACP – Accepted Industry Practice for Industrial Duct Construction	COR 512-4	01 Oct 1975	http://www.techstreet.com/cgi-bin/detail?product_id=15252
HVACDM – HVAC Systems Duct Design	COR 512-4	01 Jan 1990	http://www.techstreet.com/cgi-bin/detail?product_id=739999
HVACMF – HVAC Duct Construction Standards Metal and Flexible	COR 512-4	01 Jan 2005	http://www.techstreet.com/cgi-bin/detail?product_id=15253
RIDCS – Rectangular Industrial Duct Construction Standards	COR 512-4	01 Jan 1980	http://www.techstreet.com/cgi-bin/detail?product_id=15257
RNIDCS – Round Industrial Duck Construction	COR 512-4	01 Jan 1999	http://www.techstreet.com/cgi-bin/detail?product_id=15258

Authority: American Gear Manufacturers Association (AGMA)
Address: 500 Montgomery Street, Suite 350
 Alexandria, VA 22314-1581 USA
Phone: 703-684-0211
Fax: 703-684-0242
Website: <http://www.agma.org>

Title	Location	Date	Link
ANSI/AGMA 6001-D97 – Design and Selection of Components for Enclosed Gear Drives	COR 581-1	1997 (R2003)	http://www.agma.org/Scriptcontent/ProductDetail.cfm?pc=6001-D97
ANSI/AGMA 6013-A06 – Standard for Industrial Enclosed Gear Drives	COR 581-1	2006	http://www.agma.org/Scriptcontent/ProductDetail.cfm?pc=6013-A06
ANSI/AGMA 6025-D98 – Sound for Enclosed Helical, Herringbone and Spiral Bevel Gear Drives	COR 581-1	1998	http://www.agma.org/Scriptcontent/ProductDetail.cfm?pc=6025-D98
ANSI/AGMA 6034-B92 – Practice for Enclosed Cylindrical Wormgear Speed Reducers and Gearmotors	COR 581-1	1992 (R1999)	http://www.agma.org/Scriptcontent/ProductDetail.cfm?pc=6034-B92
ANSI/AGMA 6113-A06 – Standard for Industrial Enclosed Gear Drives (Metric Edition)	COR 581-1	2006	http://www.agma.org/Scriptcontent/ProductDetail.cfm?pc=6113-A06
ANSI/AGMA 6123-B06 – Design Manual for Enclosed Epicyclic Gear Drives	COR 581-1	2006	http://www.agma.org/Scriptcontent/ProductDetail.cfm?pc=6123-B06

Authority: International Electrotechnical Commission (IEC)

Address: 3, rue de Varembe
P.O. Box 131
1211 GENEVA 20,
Switzerland

Phone: 41 22 919 02 11

Fax: 41 22 919 03 00

Website: <http://www.iec.ch/>

Title	Location	Date	Link
IEC 60529, Edition 2.1 IPX-4 - Degrees of Protection Provided by Enclosures (IP Code)	COR 440-8	27 Feb 2001	http://www.nssn.org/search/DetailResults.aspx?docid=277701&selnode=
IEC 61097-3 – Global Maritime Distress and Safety System (GMDSS)–Part 3: Digital Selective Calling (DSC) Equipment--Operational and Performance Requirements, Methods of Testing and Required Testing Results	COR 440-5	16 June 1994	http://www.nssn.org/search/DetailResults.aspx?docid=279328&selnode=
IEC 60092-101 - Consol. Ed. 4.1 (incl. am1) – Electrical installations in ships - Part 101: Definitions and general requirements	COR 300-2	22 Aug 2002	http://webstore.iec.ch/webstore/webstore.nsf/artnum/029147?opendocument
IEC 60092-504 - Ed. 3.0 – Electrical installations in ships - Part 504: Special features - Control and instrumentation	COR 314-3	22 Mar 2001 Maintenance result date: 2006	http://webstore.iec.ch/webstore/webstore.nsf/artnum/026815?opendocument
IEC 60146-1-1 – Semiconductor convertors - General requirements and line commutated convertors - Part 1-1: Specifications of basic requirements And IEC 60146-1-1-am1 – Amendment 1 - Semiconductor convertors - General requirements and line commutated convertors - Part 1-1: Specifications of basic requirements	COR 314-3	15 Apr 1991 12 Jul 1996	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2060146-1-1?openDocument http://webstore.iec.ch/webstore/webstore.nsf/artnum/021071?opendocument
IEC 61075 - Ed. 1.0 – Loran-C receivers for ships - Minimum performance standards - Methods of testing and required test results	COR 423-3	24 Jul 1991	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2061075?opendocument
IEC 60872-1 - Ed. 1.0 – Maritime navigation and radiocommunication equipment and systems - Radar plotting aids - Part 1: Automatic radar plotting aids (ARPA) - Methods of testing and required test results	COR 451-1	23 Sep 1998 Maintenance result date: 2007	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2060872-1?openDocument
IEC 60936-2 - Ed. 1.0 – Maritime navigation and radiocommunication equipment and systems - Radar - Part 2: Shipborne radar for high-speed craft (HSC) - Methods of testing and required test results	COR 451-1	30 Oct 1998 Maintenance result date: 2007	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2060936-2?openDocument

IEC 60945 - Ed. 4.0 – Maritime Navigation and Radiocommunication Equipment and Systems – General Requirements – Methods of Testing and Required Test Results	COR 440-5	14 Aug 02	http://webstore.iec.ch/webstore/webstore.nsf/artnum/029124
IEC 61097-3 - Ed. 1.0 – Global maritime distress and safety system (GMDSS) - Part 3: Digital selective calling (DSC) equipment - Operational and performance requirements, methods of testing and required testing results	COR 440-5	16 Jun 1994 Maintenance result date: 2004	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2061097-3?openDocument
IEC 61097-8 - Ed. 1.0 – Global maritime distress and safety system (GMDSS) - Part 8: Shipborne watchkeeping receivers for the reception of digital selective calling (DSC) in the maritime MF, MF/HF and VHF bands - Operational and performance requirements, methods of testing and required test results	COR 440-5	11 Sep 1998	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2061097-8?openDocument
IEC 61162-1 - Ed. 3.0 – Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners	COR 440-5	07 Jul 2000 Maintenance result date: 2004	http://webstore.iec.ch/webstore/webstore.nsf/Standards/IEC%2061162-1?openDocument
IIEC 60529, Edition 2.1 IPX-7 Degrees of Protection Provided by Enclosures	COR 440-8	27 Feb 2001	http://webstore.iec.ch/webstore/webstore.nsf/artnum/026766?opendocument

Authority: International Maritime Organization (IMO)

Address: 4 Albert Embankment
London
SE1 7SR
United Kingdom

Phone: +44 (0)20 7735 7611

Fax: +44 (0)20 7587 3210

Website: <http://www.imo.org/home.asp>

Title	Location	Date	Link
International Convention for the Safety of Life at Sea (SOLAS)	COR: 202-2 300-4 423-2 436-2 436-3 437-2 512-4	1974	http://www.imo.org/Conventions/content.s.asp?topic_id=257&doc_id=647
IMO Assembly Resolution A.382(X) – Magnetic compasses: carriage and performance standards	COR 421-2		http://www.imo.org/InfoResource/mainframe.asp?topic_id=435&doc_id=3705
IMO Assembly Resolution A.478 (XII) – Performance standards for devices to indicate speed and distance	COR 437-3		http://www.imo.org/InfoResource/mainframe.asp?topic_id=435&doc_id=3705
IMO Assembly Resolution A.804(19) – Performance standards for shipborne MF radio installations capable of voice communication and digital selective calling	COR 440-5		http://www.imo.org/InfoResource/mainframe.asp?topic_id=435&doc_id=3705
IMO Assembly Resolution A.806(19) – Performance standards for shipborne MF/HF radio installations capable of voice communication, narrow-band direct-printing and digital selective calling	COR 440-5		http://www.imo.org/InfoResource/mainframe.asp?topic_id=435&doc_id=3705
IMO Assembly Resolution A.824 (19) – Performance standards for devices to indicate speed and distance	COR 437-3		http://www.imo.org/InfoResource/mainframe.asp?topic_id=435&doc_id=3705
IMO 185E – International Code of Safety for High-Speed Craft	COR 300-4 582-1 621-1 634-1 634-3 635-1 637-1	2000	http://maritimecompliance.com/products/international-code-of-safety-forhighspeed-cra
IMO MEPC 107(49) – Revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships	COR 529-2	18 Jul 2003	http://www.imo.org/includes/blastDataOnly.asp/data_id%3D15710/107%2849%29.pdf
IMO MSC.68(68) – Amendments to performance standards for shipborne radiocommunications equipment	COR 440-5	18 Jul 2003	http://www.imo.org/InfoResource/mainframe.asp?topic_id=435&doc_id=3710

Title	Location	Date	Link
International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)	COR 583-1		http://www.imo.org/Conventions/mainframe.asp?topic_id=258&doc_id=678

Authority: Underwriters Laboratories Inc. (UL)
Address: 333 Pfingsten Road
 Northbrook, IL 60062-2096
Phone: 847-272-8800
Fax: 847-272-8129
Website: <http://www.ul.com/>

Title	Location	Date	Link
UL 207 – Refrigerant-Containing Components and Accessories, Nonelectrical. Edition: 7th	COR 516-1	21 Nov 2001	http://www.techstreet.com/cgi-bin/detail?product_id=931120
UL 508 – Industrial Control Equipment Edition: 17th	COR: 302-2 303-2 310-5 324-1	28 Jan 1999	http://www.techstreet.com/cgi-bin/detail?product_id=7386&sid=goog
UL 595 – Marine-Type Electric Lighting Fixtures	COR: 330-5 330-8	01 Jan 1985	http://www.techstreet.com/cgi-bin/detail?product_id=19902
UL 891 – Dead-Front Switchboards	COR 310-5	26 Jul 2005	http://www.techstreet.com/cgi-bin/detail?product_id=1314605
UL 1104 – Marine Navigation Lights	COR 422-2	29 Oct 1998	http://www.techstreet.com/cgi-bin/detail?product_id=20086
UL 1236 – Battery Chargers for Charging Engine-Starter Batteries	COR: 313-2 313-3	09 Aug 2006	http://www.techstreet.com/cgi-bin/detail?product_id=1276870
UL 1778 – Uninterruptible Power Systems	COR 314-2	28 Jul 2006	http://www.techstreet.com/cgi-bin/detail?product_id=1313290

Authority: National Telecommunications and Information Administration (NTIA)

Address: Herbert C. Hoover Building (HCHB)
U.S. Department of Commerce / NTIA
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

Phone: (202) 482-4396

Website: <http://www.ntia.doc.gov/>

Title	Location	Date	Link
Manual of Regulations and Procedures for Federal Radio Frequency Management (Redbook)	COR 400-3.11	May 2003 Edition, January 2007 Revisions	http://www.ntia.doc.gov/osmhome/redbook/redbook.html

Miscellaneous

Title	Authority	Location	Date	Link	Contact
Recommended Practice No. SNT-TC-1A	The American Society for Nondestructive Testing (ASNT)	COR 074-3	2001	http://www.asnt.org/certification/snt-tc-1a/snt-tc-1a.htm	ASNT PO Box 28518 1711 Arlingate Lane Columbus, OH 43228-0518 Ph: 800-222-2768 Fax: 614-274-6899 www.asnt.org
EIA/ECA-310-E – Cabinets, Racks, Panels, And Associated Equipment	Electronics Industry Alliance	COR 400-3	Dec 2005	http://global.ihs.com/doc_detail.cfm?currency_code=USD&customer_id=21254D2A200A&shopping_cart_id=2825383F2E4A4030495A5D38280A&country_code=US&lang_code=ENGL&item_s_key=00032880&item_key_date=940031&input_doc_number=eia%20310&input_doc_title=	EIA 2500 Wilson Blvd. Arlington, VA 22201 Ph: 703-907-7500 www.eia.org
TIA/EIA-568 – Commercial Building Telecommunications Cabling Standards Set-Part 1: General Requirements, Part 2: Balanced Twisted-Pair Cabling Components, And Part 3: Optical Fiber Cabling Components Standard	Telecommunication Industry Association/ Electronics Industry Alliance	COR 087-3	Feb 2007	http://global.ihs.com/doc_detail.cfm?currency_code=USD&customer_id=21254C54430A&shopping_cart_id=2825383F2E4A4030495A5D38230A&country_code=US&lang_code=ENGL&item_s_key=00378460&item_key_date=950913&input_doc_number=tia%20568&input_doc_title=	TIA is located in the EIA Building at: 2500 Wilson Blv., Suite 300 Arlington, VA 22201 Ph: 703-907-7700 Fax: 703-907-7727 www.tiaonline.org
TIA/EIA TSB 67 – (withdrawn) Transmission Performance Specifications For Field Testing Of Unshielded Twisted-Pair Cabling Systems	Telecommunication Industry Association/ Electronics Industry Alliance	COR 412-2	10 Sep 1995 Withdrawn 23 May 2001	http://global.ihs.com/doc_detail.cfm?currency_code=USD&customer_id=212541405B0A&shopping_cart_id=2825383F2F4B3038495A3D58280A&country_code=US&lang_code=ENGL&item_s_key=00229725&item_key_date=040222&input_doc_number=TSB%2067&input_doc_title=	TIA is located in the EIA Building at: 2500 Wilson Blv., Suite 300 Arlington, VA 22201 Ph: 703-907-7700 Fax: 703-907-7727 www.tiaonline.org
Publication No. 393, "Handbook on Sanitation of Vessel Construction"	United States Public Health Service (USPHS)	COR: 605-1 533-1 533-3 533-5 533-6	1965 Revision		1101 Wootton Parkway, Plaza Level, Suite 100 Rockville, MD 20852 Ph: 800-279-1605 www.usphs.gov

Title	Authority	Location	Date	Link	Contact
Publication No. P 161019 "Ratproofing of Ships".	United States Public Health Service (USPHS) and Maritime Administration (MARAD) Joint publication	COR 605-1			1101 Wootton Parkway, Plaza Level, Suite 100 Rockville, MD 20852 Ph: 800-279-1605 www.usphs.gov
Federal Meteorological Handbook No. 1 – Surface Weather Observations and Reports	National Weather Service	COR 625-5	Dec 1995	http://www.nws.noaa.gov/oso/oso1/oso12/fmh1.htm	http://www.nws.noaa.gov/organization.php
Std RP0176-94	NACE International	COR 633-1	2003	http://www.nace.org/nacestore/search.asp?txtSearchCriteria=RP0176	http://www.nace.org/NACE/Content/AboutNACE/Contact/contactindex.asp
Electric Boat Specification EB 4013 – Anti-Sweat and Refrigerant Insulation Systems (Sheets and Tubes), Revision A	Electric Boat Corporation	COR 509-1	17 Feb 1999	To be provided as GFI	75 Eastern Point Rd. Groton, CT 06340-4989 CT Tel. 860-433-3000 Fax 860-433-1400 www.gdeb.com
ANSI/AMCA Standard 210-99, "Laboratory Methods Of Testing Fans for Aerodynamic Performance Rating"	Air Movement & Control Association International, Inc.	COR 512-4	21 Aug 2001	http://cart.amca.org/publications/product.asp?PN=210/N	30 W University Drive, Arlington Heights, IL 60004 USA Phone: (847) 394-0150 Fax: (847) 253-0088 www.amca.org
NMEA 0183 Standard	The National Marine Electronics Association (NMEA)	COR: 421-2 437-5 437-6 437-9 440-8	Jan. 2002	http://www.nmea.org/pub/0183/	7 Riggs Ave., Severna Park, MD 21146 Ph: 410-975-9425 www.nmea.org
RTCM 10900.3 (RTCM Paper 100-2002/SC109-STD), Standard for Electronic Chart Systems (ECS), Version 3.0	The Radio Technical Commission for Maritime Services	COR 425-1		https://ssl29.pair.com/dmarkle/puborder.php?show=6	1800 N. Kent St., Ste. 1060 Arlington, VA 22209 Ph: 703-527-2000 Fax: 703-351-9932 www.rtc.org

Title	Authority	Location	Date	Link	Contact
RTCM paper 133-87/SC 103-33 – Recommended Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 500 Gross Tons and Upwards	The Radio Technical Commission for Maritime Services	COR 451-1	15 May 1987		1800 N. Kent St., Ste. 1060 Arlington, VA 22209 Ph: 703-527-2000 Fax: 703-351-9932 www.rtcn.org
ITU-R M.492-11	International Telecommunications Union	COR 440-8			International Telecommunication Union (ITU) Place des Nations 1211 Geneva 20 Switzerland Ph +41 227305111 www.itu.int
ITU-R M.493-9 – Classes of DSC equipment		COR 440-5	22 Dec 1998	http://www.itu.int/itudoc/itu-r/archives/rsg/1998-00/rwp8b/52379.html	
ITU-R M.541-8 – Operational procedures for the use of digital selective-calling equipment in the maritime mobile service		COR 440-5	24 Oct 1997		
ITU-R M.1082-1 – International maritime MF/HF radiotelephone system with automatic facilities based		COR 440-5	24 Oct 1997	http://www.itu.int/rec/R-REC-M.1082-1-199710-I/en	
DIN 51524-2 – Pressure fluids - Hydraulic oils - Part 2: HLP hydraulic oils; Minimum requirements And Corrigenda to DIN 51524-2:2006-04	Deutsches Institut für Normung	COR 556-1	Apr 2006 And Sep 2006	http://www2.din.de/index.php?lang=en	Burggrafenstraße 6 10787 Berlin Ph: +49 30 2601-0 http://www2.din.de/index.php?lang=en
DIN 51524-3 – Pressure fluids - Hydraulic oils - Part 3: HVLP hydraulic oils; Minimum requirements And Corrigenda to DIN 51524-3:2006-04	Deutsches Institut für Normung	COR 556-1	Apr 2006 And Sep 2006	http://www2.din.de/index.php?lang=en	

Title	Authority	Location	Date	Link	Contact
SAWE RP#12 Weight Control Technical Requirements for Surface Ships	Society of Allied Weight Engineers Inc.	COR 096-2 COR 096-3	22 May 2002	http://www.sawe.org/technical/rp/rp12	www.sawe.org/
SAWE RP#14 Weight Estimating and Margin Manual for Marine Vehicles	Society of Allied Weight Engineers Inc.	COR 096-2 COR 096-3	22 May 2001	http://www.sawe.org/technical/rp/rp14	www.sawe.org/
ISA 18.1 – Annunciator Sequences & Specifications	ISA--The Instrumentation, Systems, and Automation Society	COR 252-1	1979 (R2004)	http://www.isa.org/Template.cfm?Section=Standards2&template=/Ecommerce/ProductDisplay.cfm&ProductID=2510	www.isa.org

LINE NUMBER	L E V	FRC-B SYSTEM CWBS ELEMENT NAME					
		2	3	4	5	6	
1		FRC-B SYSTEM					
1.1.	X	CLIN 0001 DESIGN OF FAST RESPONSE CUTTER (FRC-C)					
1.1.1	X	CONTRACT ADMIN					
1.1.1.1		X	042 GENERAL CONTRACT ADMINISTRATION				
1.1.1.2		X	043 LIFE CYCLE COST ESTIMATE				
1.1.2	X	ENGINEERING & LOGISTICS MANAGEMENT					
1.1.2.1		X	041 CONFIGURATION MANAGEMENT				
1.1.2.2		X	068 INTEGRATION AND ENGINEERING				
1.1.2.3		X	080 INTEGRATED LOGISTICS SUPPORT				
1.2	X	CLIN 0001 DETAIL DESIGN OF FAST RESPONSE CUTTER (FRC-C)					
1.2.1	X	DESIGN DEVELOPMENT					
1.2.2.1		X	000 GENERAL ADMINISTRATION				
1.2.2.2		X	100 HULL STRUCTURE				
1.2.2.3		X	200 PROPULSION				
1.2.2.4		X	300 ELECTRICAL				
1.2.2.5		X	400 ELECTRONICS/NAVIGATION				
1.2.2.6		X	500 AUXILARY SYSTEMS				
1.2.2.7		X	600 OUTFITTING (EXCEPT AEL/GUCL)				
1.2.2.8		X	700 WEAPONS				
1.3	X	CLIN 0002 SYSTEM SAFETY PROGRAM					
1.4	X	CLIN 0003 HUMAN ENGINEERING PROGRAM					
1.5	X	CLIN 0004 TRAINING EQUIPMENT PACKAGE					
1.6	X	CLIN 0005 TRAINING DATA					
1.7	X	CLIN 0006 MODEL					
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Part III – List of Documents, Exhibits, and Other Attachments
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1. [RFP] REFERENCED DOCUMENTS

- 1.1. [A004] Throughout this Solicitation/Contract, where external documents are referenced, the version, amendment, or revision specified in this attachment shall apply.
- 1.2. [A004] Please reference Section [L.2](#) for availability of specifications listed in the GSA index of federal specifications, standards and commercial item descriptions.

2. [RFP] ORDER OF PRECEDENCE

- 2.1. [A004] The order of precedence is specified in Section [I.1](#), 52.215-8, and in the Circular of Requirements Section [042-5](#).
- 2.2. [A004] The offeror/contractor shall immediately notify the contracting officer in writing of any perceived conflicts herein.

3. [RFP] ACCESSIBILITY

- 3.1. [A004] Items on this list will be made available within 30 days of contract award, and shall not be distributed further.

4. [A014] GOVERNMENT DOCUMENTS

Authority: U.S. Coast Guard

Title	Date
COMDTINST C5510.4G – Shipboard Design, Installation and Red/Black Engineering Criteria for Secure Electrical Information Processing Systems	10 Dec 1993
COMDTINST M3502.4I – Cutter Training and Qualification Manual	31 Aug 2007
COMDTINST M5530.1C – Physical Security Force Protection Program Manual	17 Dec 2001

The following software will be provided and installed by the government to run on contractor furnished hardware specified in the technical requirements and is not required, nor will it be provided, prior to contract award:

Title	Date
Shipboard Command and Control System – 110 (SCCS-110).	
ECS (V2) VEGA	
Sensitive But Unclassified Tactical Information Exchange And Display System (STEDS)/VEGA	

Authority: U.S. Navy

Title	Date
U.S. Navy IA 5239-22 – Protected Distribution Systems	Oct 2003
U.S. Navy IA 5239-31 – Shipboard RED/BLACK Installation Guidance	Jul 2001
U. S. Navy Design Data Sheet 170-0 – Mast Design	01 Jul 1980
U. S. Navy Design Data Sheet 310-1 – Electric System Load and Power Analysis for Surface Ships	01 Jul 1980
U. S. Navy Design Data Sheet 311-2 – Voltage Regulation of AC Ship Service Electrical Power Systems	01 Oct 1972
U. S. Navy Design Data Sheet 581-1 – Calculation and Use of Anchoring Nomographs	01 Jul 1984
U. S. Navy Design Data Sheet 582-1 – Calculations for Mooring Systems	16 Jan 1987

Title	Date
S9086-CN-STM-010/CH-079V1R1 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 79 Vol.1 – DAMAGE CONTROL - STABILITY AND BOUYANCY	Oct 2005
S9086-CN-STM-020/CH-079V2R2 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 79 Vol.2 – DAMAGE CONTROL - PRACTICAL DAMAGE CONTROL	Oct 2005
S9086-RK-STM-010/CH-505 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 505 – PIPING SYSTEMS	Oct 2005
S9086-S4-STM-010/CH-556R4 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 556 – HYDRAULIC EQUIPMENT (POWER TRANSMISSION AND CONTROL)	Oct 2005
S9086-T8-STM-010/CH-593R4 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 593 – POLLUTION CONTROL	Oct 2005
S9086-VF-STM-010/CH-633R2 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 633 – CATHODIC PROTECTION	Oct 2005
S9086-VG-STM-010/CH-634R3 U.S. Navy Naval Ship's Technical Manuals (NSTM) Chapter 634 – DECK COVERINGS	Oct 2005

Authority: Naval Sea Systems Command (NAVSEA)

Title	Date
NAVSEA 0967-LP-177-3010 – Shipboard Antenna Systems	01 Sep 1972
NAVSEA 0967-LP-177-3020 – Shipboard Communications Antenna Systems, Technical Manual, Volume 2, Revision 1	1 Nov 1980
NAVSEA 0900-LP-060-4010 – Fabrication, Welding and Inspection of Metal Boat and Craft Hulls.	17 Mar 1980
NAVSEA 0938-LP-018-0010 – Heating, Ventilation and Air Conditioning Design Criteria Manual for Surface Ships of the United States Navy	29 Mar 1991
NAVSEA 0948-LP-102-2010 REV 1 – Fuel and Lube oil Strainer Safety Shield Design Guidance - Maintenance	19 Dec 1990
NAVSEA 0967-LP-000-0100 – Electronics Installation and Maintenance Book (EIMB)	Apr 1983
NAVSEA 0967-LP-000-0110 – Navy Installation and Maintenance Book (NIMB) Installation Standards	01 Sep 1995
NAVSEA 0967-LP-000-0150 – Electronics Installation and Maintenance Book – Electromagnetic Interference Reduction	June 1972
NAVSEA OP4 – Ammunition and Explosives Safety Afloat	15 Feb 1972

Title	Date
NAVSEA OP3565, Vol. II, "Electromagnetic Radiation Hazards (Hazards to Ordnance)"	01 May 2002
NAVSEA S6430-AE-TED-010 – Piping Devices, Flexible Hose Assemblies	15 Jul 2003
NAVSEA S9AA0-AA-SPN-010/GEN-SPEC – General Specifications for Ships of the United States	1995
NAVSEA S9078-AA-HBK-010/DIM – Navy Distributed Isolation Material Mount Design Handbook	07 Sep 1982
NAVSEA S9073-A2-HBK-010 – Resilient Mount Handbook	30 Sep 2005
NAVSEA T9500-AA-PRO-130 – NAVSEA Design Practices and Criteria Manual for air Conditioning, Ventilation and Heating of Surface Ships; CHAPTER 510 (0910-LP-102-9485)	5 May 1988
NAVSEA Technical Publication 03Y3-101 Composite Material Replacement Components for Centrifugal Pumps	19 Apr 1994
NAVSEA Drawing No. 439945 – Stand	14 June 1989
NAVSEA Drawing No. 6086299 Rev C – Tripod	16 Jun 1989
NAVSEA Drawing No. 6086300 – Mount, Gun, Cal. .50 MK 26 MOD 17	15 Jun 1989
NAVSEA Drawing No. 8180341 Rev 03 – Machine Gun System, 25mm, Mark 38, Mod 2	19 May 2006
NAVSEA Drawing No. 8180343 Rev G – Interface Control Drawing Machine Gun System (MGS) MK 38 Mod 2	19 May 2006
NAVSEA Drawing No. 8180346 Rev E – Interface Control Drawing Main Control Panel	02 Mar 2006
NAVSEA Drawing No. 8180347 Rev E – Interface Control Drawing Multi Functional Display	19 May 2006
NAVSEA Drawing No. 8180349 Rev E – Interface Control Drawing Charger Box	19 May 2006
NAVSEA Drawing No. 8180350 Rev D – Interface Control Drawing Junction Box	02 Mar 2006
NAVSEA Drawing No. 8180351 Rev 02 – Interconnection Diagram MK38 Mod2 Machine Gun System (MGS)	23 Jun 2006
NAVSEA Drawing No. 8180354 Rev D – Shipboard Installation MK38 Mod2 Machine Gun System (MGS)	15 May 2006
NAVSEA Drawing No. 8180357 – Remote Operators Console	
NAVSEA Drawing No. 8180358 – Remote Operators Console	
NAVSEA Drawing No. 8180359 – Table Base Assy	
NAVSEA Drawing No. 8180367 Rev D – Interface Control Drawing Cable Assembly W51	05 Jul 2006
NAVSEA Drawing No. 8180368 Rev E – Interface Control Drawing Cable Assembly W1	09 Aug 2006

Title	Date
NAVSEA Drawing No. 8180369 Rev E – Interface Control Drawing Cable Assembly W3	05 Jul 2006
NAVSEA Drawing No. 804-1360106 – Locker Details	
NAVSEA Drawing No. 803-1385711 – Valve, Hose Globe, In-Line & Angle	1 Mar 1991
NAVSEA Drawing No. 803-5001104 – Rudder Stock Bearings and Seals	19 Feb 1985
NAVSEA Drawing No. 804-5184210 – Locker .50 caliber ammunition	23 Nov 1981
NAVSEA Drawing No. 804-5959214 – Piping Insulation Installation Details	20 Sep 1984
NAVSHIPS 0969-120-7010 – Antenna and transmission line reflectometer measurement test No 4-TDR	1 Jan 1971
Naval Sea Systems Command, Commercial General Specifications for T-ships of the United States Navy, 1991 Ed. – section 529	15 Mar 1991
EB Spec 4013 – Anti-Sweat and Refrigerant Insulation Systems (Sheets and Tubes), Revision A.	17 Feb 1999

Part III – List of Documents, Exhibits, and Other Attachments
Section J, Attachment 7: Government Furnished Equipment

GOVERNMENT FURNISHED EQUIPMENT

Item Description	Disposition	Acquisition Value
Shipboard Infrared Visual Surveillance System (SIRVSS) (Electro Optical - Infra Red (EO-IR) sensor, display, and processing system)	One system will be provided to the contractor for installation on each FRC-B. Delivery date to be inserted here upon contract award.	\$362,364.00 each
Identification of Friend or Foe (IFF)	One system will be provided to the contractor for installation on each FRC-B. Delivery date to be inserted here upon contract award.	\$176,750.00 each

Part III – List of Documents, Exhibits, and Other Attachments

Section J, Attachment 8: Concept of Operation Scenarios

1. [RFP] The following scenarios are representative of typical missions that the FRC shall perform but the capabilities listed in each are not all-inclusive. For a full understanding of the requirements the Offeror shall refer to the applicable COR section.
 - 1.1. [RFP] Search and Rescue. The FRC is tasked to respond to a distress call from a fishing vessel taking on water 20 NM from their position. The FRC proceeds at flank speed to arrive at the position indicated and communications are established with the damaged fishing vessel. The RIB is launched with the Rescue and Assistance (R&A) team (5 people), a portable dewatering pump and damage control gear. Upon determining that the vessel is safe to board, the R&A team boards the vessels and does a complete investigation for damage. They discover a cracked pipe in the main engine cooling system that is filling the engine room with sea water. The team patches the pipe securing the flow of water, and uses the P-6 to begin to dewater the compartment. It is discovered that one of the crew members from the fishing vessel suffered serious burns while attempting to plug the crack. The injured crewmember is transferred via the RIB back to the FRC to be seen by the unit Emergency Medical Technician (EMT). The victim is placed in the triage center of the ship, and the EMT consults with a flight surgeon ashore and passes the vital signs and description of the injury. The Flight Surgeon determines that the extent of the injuries require immediate medical attention ashore. The FRC coordinates for an H-60 to Medical Evacuation (MEDEVAC) the injured crewmember. The H-60 arrives on scene, and conducts a basket hoist transfer of the injured crew member. As the injured crewmember is transferred to the nearest hospital, the FRC takes the 120' fishing vessel in astern tow. The FRC tows the fishing vessel towards its homeport until relieved by a commercial salvage tug.
 - 1.2. [RFP] Counter Narcotic Scenario. The FRC is patrolling as part of a task force in response to intelligence received that suggests that an unknown amount of narcotics may be smuggled via go-fast to a nearby shoreline. A Coast Guard C-130 detects a TOI traveling north at 25 to 30 knots. The FRC is directed to intercept the target. The FRC proceeds south to the intercept position and locates the vessel, a 30-ft go-fast with twin outboards, no lights, and riding low in the water. The "go fast" is intercepted inside U.S. waters, but fails to stop. The go-fast has no indicia of nationality and is moving erratically north bound at 28-30 knots. Three people are visible onboard and initially refuse to acknowledge the presence of the FRC. The FRC energizes its blue law enforcement light, closes the TOI to a range of 500 yards, and makes continual calls on Channel 16 VHF in English and Spanish ordering the vessel to stop. The TOI refuses to stop, although acknowledges the FRC presence by moving erratically and attempting to evade the FRC. The FRC develops probable cause to believe this vessel is involved in smuggling narcotics, validates its jurisdiction and authority, and receives a Statement of No Objection (SNO) to conduct warning shots and disabling fire. The FRC prepares the .50 caliber machine guns for disabling fire. The FRC makes repeated calls over channel 16 and the loud hailer and warns the "go fast" and any local traffic of the impending law enforcement action. The "go fast" refuses to stop. The FRC completes three five round bursts of warning shots with tracer rounds 100 yards in front of the bow of the go-fast. The "go fast" does not stop. The FRC closes to 200 yards a beam of the "go fast" and

starts to fire three round bursts directed at the outboard engines. The “go fast” stops. The FRC announces over the loud hailer for the crew to lay down with their hands on their heads, and the go-fast crew complies. The RIB is immediately launched with a six-member boarding team (BT) and goes alongside the go-fast. The BT boards the go-fast, and discovers 43 bales that test positive for cocaine. The go-fast crew is searched for weapons and contraband, transferred to the FRC and detained. The go-fast is searched for evidence and intelligence items and then taken in tow. Once the “go fast” is in tow, the RIB is recovered. The FRC tows the go-fast to port to transfer the drugs, crew, and the go-fast to Customs Boarder Patrol agents.

- 1.3. [RFP] Alien Migrant Interdiction Operations Scenario.** A rustic sailing vessel is sighted by a Coast Guard H-60 that appears to be carrying over 100 migrants. The FRC is directed to intercept the sailing vessel. At 0100 local the FRC, while running covertly without navigation lights, picks up a contact near the estimated intercept position at a range of seven miles. The vessel is heading northbound at 3 knots. The FRC closes the TOI to a range of 2 NM and visually identifies the contact with the EO/IR which matches the description provided by the Coast Guard H-60. The FRC closes the sailing vessel to a range of one mile, and launches the RIB with a four person boarding team and 50 life jackets. Secure voice communications are established with the BT, the FRC, and RIB coxswain. Both the RIB and the FRC proceed on course and speed to intercept the TOI. Once in position both the FRC and RIB energize their blue law enforcement and navigation lights and attempt to contact the TOI via VHF radio and loud hailer. Voice communications are established using a Spanish speaking crew member embarked in the RIB. Although no one will identify themselves as the “master”, the migrants collectively refuse to leave the ship. The vessel is in poor shape, and presents a significant safety of life at sea situation. The FRC positions itself to block the wind to the sails, while the RIB distributes PFDs to everyone on board. Eventually the migrants agree to be taken off the sailing vessel. The RIB transfers groups of migrants back to the FRC in groups of 8. The final number of migrants is determined to be 150, consisting of 100 adult males, 40 adult females, and 10 children. Appropriate situation reports are developed by the FRC crew and transmitted to their tactical commander. Once the migrants have been removed, the Boarding Team boards the migrant vessel and begins an Initial Safety Inspection (ISI). Continuous secure voice communications are maintained over pre-designated channels/frequencies with the RIB and FRC. No other migrants, documentation or further evidence is found regarding the vessel or passengers. Meanwhile, the migrants are processed on the FRC. They receive a pat down frisk to ensure that they are not hiding weapons or contraband, receive an initial medical screening, are issued an ID bracelet, and all personal property is removed, inspected, and bagged. Four FRC crew members keep continual watch over the migrants while equipped with a handheld radio for direct communications to the bridge. The boarding team completes their boarding of the migrant vessel and determines that the sailing vessel is un-seaworthy for towing. The FRC asks for and receives permission to sink the vessel as a hazard to navigation. The rustic sailing vessel is sunk by the FRC by firing several rounds near the water line from the 25mm main gun. The migrants are fed, given water, and are escorted to a portable head on the aft deck as necessary. The FRC holds the migrants for 24 hours until transferring them to a WMEC.
- 1.4. [RFP] Living Marine Resources Scenario.** A FRC is directed to locate a fishing vessel believed to be illegally harvesting fish in the OPAREA. The FRC is directed to intercept and board the TOI after the vessel is sighted by a Coast Guard helicopter inside of a closed area. The FRC proceed towards the last known position and locates the fishing vessel and launches its RIB out of side the visual range of the fishing vessel. The RIB covertly approaches the fishing vessel and prepares to transfer the boarding team. The

six-person BT boards from the RIB and conducts a fisheries boarding. Serious violations are found. The vessel's catch is seized and the crew detained. The FRC escorts the fishing vessel to the nearest port.

- 1.5. [RFP] Maritime Domain Awareness Scenario. A FRC on patrol 150 miles off shore locates, identifies and approaches a foreign flagged merchant vessel headed towards the U.S. The FRC determines the vessel is enroute to San Diego. The FRC receives consent from the vessel's Captain to board for a routine inspection. A 6 person BT is sent over using the RIB. The BT finds significant safety violations including inadequate lifeboats and improper storage of hazardous/flammable liquids. The Captain of the Port in San Diego is notified and directs the FRC to escort the vessel toward San Diego, where they will be met by a Vessel Inspection Team prior to entering port. The FRC establishes secure communications with a station boat when it is approximately 20 miles offshore. The station boat, transfers the Vessel Inspection Team to the merchant vessel. Once the FRC boarding team is relieved by the inspection team, the station small boat transfers the boarding team back to the FRC. The FRC continues to escort the vessel until released by its tactical commander.
- 1.6. [RFP] General Defense Operations Scenario. The Navy, with support from the Coast Guard, is conducting defense operations. While on patrol an FRC receives a distress signal which correlates to a radar contact at 15 NM. The contact is heading 330T at 15 knots. The FRC intercepts and identifies the vessel as a U.S. flagged tanker. No evidence of distress is seen, and the vessel will not respond to calls on VHF. Database information shows the vessel is three hours overdue. EO/IR reveals several individuals, armed with automatic weapons, on the bridge wing, who begin to fire upon on the FRC. The FRC sets General Quarters and returns fire from the .50 cal machine guns and the 25mm, and alerts **U.S. Central Command** (CENTCOM) Authorities. The FRC also informs the Carrier Strike Group (CSG), who dispatches a second FRC and a DDG-51 class destroyer. The target continues on course and speed for a short time, then goes dead in the water. Attempts to hail the vessel via VHF are unsuccessful. The DDG arrives on scene and launches its helicopter with a SEAL team embarked. The FRC takes station near the target to offer cover fire if needed. The SEAL team fast ropes down to the tanker and quickly secures the vessel and crew and completes a complete inspection of the vessel. The SEAL team finds a cache of illegal arms. The weapons are seized, the master, and crew detained. The FRC sends over a boarding team to assist with security and piloting the ship towards port. The FRC escorts the tanker and security team back to CENTCOM authorities in port.

Part III - List of Documents, Exhibits, and Other Attachments
Section J, Attachment 9: FRC-B Outfit List

Version	Hull	Outfit/ GUCL/ Repair Lkr/ CBR	ReqItem	CatNum	PartNum	CageNum	FSC	NIIN	Description	ReqQty	Unit
A013	FRC-B	G	4	4053496			6445	012053626	50'-THOF-4-CABLE	50	FF
A013	FRC-B	R	2	1019830			5140	002887763	BAG TOOL	2	EA
A013	FRC-B	O	3	1030811			6545	009118725	BAG, GUN CREW FIRST AID KIT	2	EA
A003	FRC-B	G	4	1002310			6135	008357210	BATTERY D CELL 1.5 VOLT ALKALI	1	PG
A013	FRC-B	R	5	1030072			6135	006431310	BATTERY, NON-RECHARGE 6 VOLT	1	PG
A013	FRC-B	R	6	1020050			8430	007535940	BOOT FIREMAN 10	4	PR
A013	FRC-B	R	7	1020051			8430	007535941	BOOT FIREMAN 11	4	PR
A013	FRC-B	R	8	1019899			8430	007535942	BOOT FIREMAN 12	4	PR
A013	FRC-B	R	9	1020049			8430	007535939	BOOT FIREMAN 9	4	PR
A013	FRC-B	R	10	1019815			7510	002729256	CHALK CARPENTER	2	BX
A013	FRC-B	R	11	1002233			7520	002405503	CLIPBOARD FILE 17 X 9	3	EA
A013	FRC-B	R	12	1058178			4210	014685565	FIRE FIGHTING COVERALL LG	4	EA
A013	FRC-B	R	13	1058179			4210	014685673	FIRE FIGHTING COVERALL LONG XL	1	EA
A013	FRC-B	R	14	1058180			4210	014685551	FIRE FIGHTING COVERALL MED	1	EA
A013	FRC-B	R	15	1058181			4210	014685671	FIRE FIGHTING COVERALL XLG	3	EA
A013	FRC-B	O	16	1002333			6230	002705418	FLASHLIGHT, WATERPROOF	22	EA
A013	FRC-B	R	17	1002005			5330	002391873	GASKET, HOSE 1 1/2 IN	4	EA
A013	FRC-B	R	18	1068735					GASKET, HOSE 2 1/2 IN	2	EA
A013	FRC-B	O	19	1054434	RUB-16541/COI-R38100	0P899			HOSE AIR 100' 3/8" WITH QUICK	1	EA
A013	FRC-B	R	20	1019820			5315	001645121	NAILS 16D POUND	5	LB
A013	FRC-B	R	21	1002344			5330	001915679	OAKUM	12	LB
A013	FRC-B	R	22	1002241			7520	002236672	PENCIL GREASE	3	DZ
A013	FRC-B	O	28	1036415			9905	002739116	PLATE, DESIGNATION WILLIAM	6	EA
A013	FRC-B	O	29	1064863			9905	002739113	PLATE, DESIGNATION X-RAY	6	EA
A013	FRC-B	O	30	1036417			9905	002739114	PLATE, DESIGNATION YOKE	6	EA
A013	FRC-B	R	31	1030129			5330	012426187	SYNTHOGLASS 3X96	30	RL
A013	FRC-B	R	32	1002338			5970	001858531	TAPE ELECTRIC	2	RO
A003	FRC-B	G	33	1019728			5970	006869151	TAPE INSULATING	1	RO
A013	FRC-B	R	34	1019985			5640	001032254	TAPE, DUCT	3	EA
A013	FRC-B	R	35	1019806			5210	002211886	TAPE, MEASURING 50FT	4	EA
A013	FRC-B	R	36	1019786			4020	002315870	TWINE, HEMP	1	LB
A013	FRC-B	R	37	1019731			4320	2170938	1 1/2" INLET, 2 1/2" OUTLET EJECTO	2	EA
A013	FRC-B	R	38	1053487			5120	002771478	14" PIPE WRENCH	1	EA
A013	FRC-B	R	40	1002326			4210	001424949	AXE PICK HD	1	EA
A013	FRC-B	R	41	1036930			8465	011178699	BAG DUFFLE	14	EA
A013	FRC-B	R	43	1052078			5140	004736256	BAG, TOOL, NYLON DUCK	2	EA
A013	FRC-B	R	44	1019741			5110	002406031	BAR CHISEL 36"	1	EA
A013	FRC-B	R	45	1002417			5120	002241390	BAR PINCH 60"	1	EA
A013	FRC-B	R	46	1019805			5140	003911069	BELT TOOL	1	EA
A013	FRC-B	R	47	1002389		80244	5110	002774591	BLADE, HND HACKSAW 12 IN	2	BD
A013	FRC-B	R	48	1002328		80244	5110	002774590	BLADE-HND HAKSA 12 IN	2	BD
A013	FRC-B	R	49	1001595			8430	002628257	BOOT EM 10	2	PR
A013	FRC-B	R	52	1019787			5210	008103490	CARPENTER SQUARE	2	EA
A013	FRC-B	R	53	1002394			5120	002223241	CAULKING IRON	2	EA
A013	FRC-B	R	54	1002398			5110	006405423	CHISEL	2	EA
A013	FRC-B	R	55	1002403			5110	002218132	CHISEL COLD	2	EA
A013	FRC-B	R	56	1019962			5110	006405419	CHISEL WOOD	1	EA
A013	FRC-B	R	57	1002409			5120	002036431	CLAMP-C MED SER 6"	8	EA
A013	FRC-B	R	58	1019788			5120	008403358	CLAMP-C MED SER 8"	8	EA
A013	FRC-B	R	59	1019937			4210	003074699	COUPLING-HOSE, DBL FEM 1.5"	1	EA
A013	FRC-B	R	60	1002781			4210	002888816	COUPLING-HOSE, DBL FEM 2.5"	1	EA
A013	FRC-B	R	61	1066517	491500	55799			COVER, LENS, CLEAR, SCBA MASK	2	BX
A013	FRC-B	R	62	1019890			5110	005969156	CUTTER BOLT 24"	1	EA
A013	FRC-B	R	64	1002316			6665	007107815	DETECTOR KIT, GAS TOXIC	2	EA
A013	FRC-B	R	65	1039707			5130	006406343	DRILL PNEUMATIC	1	EA
A013	FRC-B	R	66	1002332			5133	002930983	DRILL SET TWIST 1/16" - 1/2"	1	SE
A013	FRC-B	R	67	1002804			8110	010318863	DRUM, SHIPPING & STORAGE	2	EA
A013	FRC-B	R	68	1002255			4210	008892221	EXTINGUISHER, FIRE (2LBS)	1	EA
A013	FRC-B	R	69	1019723			4240	005422048	FACE SHIELD	1	EA

Version	Hull	Outfit/ GUCL/ Repair Lkr/ CBR	ReqItem	CatNum	PartNum	CageNum	FSC	NIIN	Description	ReqQty	Unit
A013	FRC-B	R	70	1034304			4210	012079687	FIRE FINDER, SENSOR THERMAL MD	2	EA
A013	FRC-B	R	71	1002779			4730	009324753	CONNECTION, INTERNATIONAL SHIP	1	EA
A013	FRC-B	R	72	1002334			5110	002899657	FRAME, HAND HACKSAW	3	EA
A013	FRC-B	R	73	1000778	BBS-3	21574			FUSE	5	EA
A013	FRC-B	R	74	1020241	BBS-10	21574			FUSE	5	EA
A013	FRC-B	R	75	1007923	BBS-5	21574			FUSE	5	EA
A013	FRC-B	R	77	1019867			8415	011589450	GLOVE 7500 VOLT RUBBER	2	PR
A013	FRC-B	R	78	1001690			8415	002643618	GLOVE SHELL	2	PR
A013	FRC-B	R	79	1001691			8415	012679661	GLOVES ANTI FLASH	22	PR
A013	FRC-B	R	80	1052855	Z-GL-143	48849			GLOVES, FIRE	22	PR
A013	FRC-B	R	81	1037626			5120	009006113	HAMMER 2 LB	1	EA
A013	FRC-B	R	82	1002466			5120	000618546	HAMMER 2#	5	EA
A013	FRC-B	R	83	1019932			5120	000618543	HAMMER BALL PEEN 1#	1	EA
A013	FRC-B	R	84	1002464			5120	008925744	HAMMER RIPPING	2	EA
A013	FRC-B	R	85	1019961			5110	002283161	HATCHET	3	EA
A013	FRC-B	O	86	1002380			5965	009006401	HEADSET-CHEST SET	10	EA
A013	FRC-B	R	87	4049827			8415	014937428	HELMET, FIREFIGHTER	12	EA
A013	FRC-B	R	88	1049728	FL185	48849			HELMET MOUNT	12	EA
A013	FRC-B	R	89	1019862			8470	011277337	HELMET, PHONE TALKERS	2	EA
A013	FRC-B	R	90	1053884			8415	014627670	HOOD ANTI FLASH	26	EA
A013	FRC-B	R	91	1002008			4210	011310249	HOSE ASSY 1-1/2" X 50FT	10	EA
A013	FRC-B	R	92	1001997			4210	011310247	HOSE ASSY 2-1/2" X 50FT	3	EA
A013	FRC-B	R	93	1020007			5935	010123066	HOSPITAL GRADE PLUG FEMALE	1	EA
A013	FRC-B	R	94	1020008			5935	010053579	HOSPITAL GRADE PLUG MALE	1	EA
A013	FRC-B	R	95	1002295			6625	001321196	INDICATOR VOLT/FREQ	1	EA
A013	FRC-B	R	96	1002381			5935	005526790	JACK BOX	2	EA
A013	FRC-B	R	97	1028847			4240	012723841	KIT - PORTABLE EXOTHERMIC	1	EA
A013	FRC-B	R	98	1002814			8460	006068366	KIT BAG, FLYER'S	25	EA
A013	FRC-B	R	99	1002486			5110	002405943	KNIFE, ELECTRICIANS	2	EA
A013	FRC-B	R	100	1002339		86369	3030	002666611	LACING BELT LEATHER	1	BX
A013	FRC-B	R	101	1002341			6230	006433661	LANTERN SEAL BEAM	2	EA
A013	FRC-B	R	102	1037853			6230	011412901	LANTERN-ELECTRIC, BATTLE	1	EA
A013	FRC-B	R	103	1001783			4020	002402185	MARLINE-TAR 2 PLY	4	CL
A013	FRC-B	R	104	1048180			7220	002674630	MATTING RUBBER	1	RO
A013	FRC-B	R	105	1002343			5120	002551476	MAUL-SHIP 5LB, 32" HNDL	4	EA
A013	FRC-B	R	106	1019870			4210	002773374	NIPPLE-HOSE 1.5"	1	EA
A013	FRC-B	R	107	1002785			4210	002773375	NIPPLE-HOSE 2.5"	1	EA
A013	FRC-B	R	108	1017364			4210	004651906	NOZZLE, VARI-PATTERN 1.5"	4	EA
A003	FRC-B	O	110	1051877			4320	014705515	P-6 PUMP KIT	2	EA
A013	FRC-B	R	111	1002497			7510	002757213	PENCIL CARPENTER	1	DZ
A013	FRC-B	R	112	1002499			5110	002398253	PLIERS DIAGONAL 6 IN	2	EA
A003	FRC-B	O	113	1019891			5120	002398251	PLIERS LINEMAN 8"	2	EA
A003	FRC-B	O	114	1002347			5120	002237397	PLIERS SLIP JOINT	2	EA
A013	FRC-B	R	115	1019747			5510	002608949	PLUGS, 10X7X12	4	EA
A013	FRC-B	R	116	1002362			5510	002608953	PLUGS, 1X0X3	20	EA
A013	FRC-B	R	117	1002363			5510	002608958	PLUGS, 2X0X4	16	EA
A013	FRC-B	R	118	1019784			5510	002608962	PLUGS, 3X0X8	14	EA
A013	FRC-B	R	119	1019766			5510	002608966	PLUGS, 5X1X10	6	EA
A013	FRC-B	R	120	1019777			5510	002608969	PLUGS, 7X3X10	2	EA
A013	FRC-B	R	121	1019823			5510	002608973	PLUGS, 8X4X10	2	EA
A013	FRC-B	R	123	1049722	STYLE 3071 BRS W/1.5IN TH NPSH	00912			PROPORTIONER, FOAM INLINE, AKR	2	EA
A003	FRC-B	O	124	1002348			5120	002249456	PULLER 100 AMP	1	EA
A003	FRC-B	O	125	1019730			5120	002432776	PULLER 600 AMP	1	EA
A003	FRC-B	O	126	1031598			4320	013872869	PUMP, FIRE	2	EA
A013	FRC-B	G	127	1019966		80244	7920	002051711	RAGS-COTTON	1	BE
A013	FRC-B	R	128	1002793			4210	002033512	RAKE OHAUL	1	EA
A013	FRC-B	R	129	1025234			4210	001434353	REDUCER 2.5F-1.5M	1	EA
A003	FRC-B	O	130	1002001			4210	003718084	REDUCER HOSE 3-4X1 1-2	1	EA
A013	FRC-B	R	131	1002795			4210	003776521	REDUCER-HOSE 4" FEM-3" MALE	1	EA
A013	FRC-B	R	132	1002383			8130	002638644	REEL & CABLE	2	EA
A013	FRC-B	R	133	1019750			5330	001790052	RUBBER	2	SY
A013	FRC-B	R	134	1019954			5210	002933393	RULE-MULTIPLE FOLDING	2	EA
A013	FRC-B	O	135	4049955			5440	005960924	SAW-CROSSCUT	4	EA

Version	Hull	Outfit/ GUCL/ Repair Lkr/ CBR	ReqItem	CatNum	PartNum	CageNum	FSC	NIIN	Description	ReqQty	Unit
A003	FRC-B	O	138	1036564	5682A46		5120	008326219	SCREWDRIVER PHILL # 2 - 8-10"	1	EA
A003	FRC-B	O	139	1002534			5120	002228852	SCREWDRIVER-FLT TIP 1/4 4" .25	1	EA
A003	FRC-B	O	140	1002540			5120	002933309	SCREWDRIVER-FLT TIP 10" .375	1	EA
A013	FRC-B	G	141	1002809			5330	000627420	SEAL, RUBBER STRIP	2	EA
A013	FRC-B	R	142	1019963			5110	002236370	SHEARS	2	EA
A013	FRC-B	R	143	1019866			2090	000583737	SHORING 3-5	4	EA
A013	FRC-B	R	144	1019873			2090	000521581	SHORING 6-11	4	EA
A013	FRC-B	R	145	1033265			5120	001888446	SHOVEL OHAUL	1	EA
A013	FRC-B	R	146	1019986			5120	011215023	SMOKE CURTAIN CLIPS	2	DZ
A013	FRC-B	O	147	4049746	SMOKE CURTAINS	0BNT8			INSTALLED READY TO DEPLOY CUSTOM FITTED	VAR	EA
A013	FRC-B	Ø	148	4049744	SMOKE CURTAIN 34 IN X 76 IN	0BNT8			SMOKE CURTAIN, MAIN DECK	2	EA
A013	FRC-B	Ø	149	4049748	SMOKE CURTAIN 2 IN X 32 IN X 2 IN X 85 I	0BNT8			SMOKE CURTAIN, MESSDECK	4	EA
A013	FRC-B	Ø	150	4049747	SMOKE CURTAIN 2 IN X 27 IN X 2 IN X 78 I	0BNT8			SMOKE CURTAIN, PILOTHOUSE	4	EA
A013	FRC-B	Ø	151	4049746	SMOKE CURTAIN 2 IN X 28 IN X 2 IN X 76 I	0BNT8			SMOKE CURTAIN, VESTIBULE	4	EA
A013	FRC-B	R	152	1002016			4210	010386001	SPECIAL TRIGATE 1 1/2" X 2 1/2" X 1	2	EA
A013	FRC-B	R	153	1002019			4210	002550234	CONNECTION, SIAMESE WYE GATE	1	EA
A003	FRC-B	O	154	1036158			4240	005164683	SPECTACLES MEDIUM	1	EA
A003	FRC-B	O	155	1049729	Z-FL159	48849			STEALTH LITE	22	EA
A003	FRC-B	O	156	1019886			5110	002387696	STRIPPER, CABLE	2	EA
A003	FRC-B	O	158	1053492			5210	011397444	TAPE MEASURE 25 FT	2	EA
A003	FRC-B	O	159	1001990			9390	010788660	TAPE, ILLUMINESCENT 3" X 1800"	2	RO
A013	FRC-B	R	161	1047235		13873	6665	007690943	TUBE GAS DETECTOR - BENZENE	2	BX
A013	FRC-B	R	162	1002319			6665	007690945	TUBE GAS DETECTOR - CARBON DIO	2	SE
A013	FRC-B	R	163	1002320		13873	6665	007690949	TUBE GAS DETECTOR - CARBON MON	2	BX
A013	FRC-B	R	164	1034252			6665	013841508	TUBE GAS DETECTOR - HYDROCARBO	2	SE
A013	FRC-B	R	167	1002322			6665	010107961	TUBE GAS DETECTOR - HYDROGEN S	2	SE
A003	FRC-B	O	168	1019982			5120	002249486	WEDGE JT BRK	2	EA
A013	FRC-B	R	169	1019749			5510	002683479	WEDGES, PLUGGING TYPE 2X2X8	14	EA
A013	FRC-B	R	170	1053885			5510	002683486	WEDGES, PLUGGING TYPE 2X3X12	2	EA
A013	FRC-B	R	171	1019760			5510	002683481	WEDGES, PLUGGING TYPE 3X3X12	10	EA
A013	FRC-B	R	172	1019783			5510	002683480	WEDGES, PLUGGING TYPE 4X2X8	4	EA
A013	FRC-B	R	173	1019785			5510	002683482	WEDGES, PLUGGING TYPE 6X3X12	10	EA
A013	FRC-B	R	174	1019789			5120	002643793	WRENCH AUTO ADJ 15"	1	EA
A013	FRC-B	R	175	1002597			5120	002771486	WRENCH PIPE 14"	2	EA
A003	FRC-B	O	176	1053488			5120	002931602	WRENCH SPANNER	2	EA
A003	FRC-B	O	177	1002003			5120	002779075	WRENCH SPNR ADJ HOOK	2	EA
A003	FRC-B	O	178	1002356			5120	002405328	WRENCH, ADJ 8"	3	EA
A003	FRC-B	O	179	1019964			5120	004236728	WRENCH, ADJUSTABLE 15"	2	EA
A003	FRC-B	O	180	1002018			5120	002779076	WRENCH, SPANNER	2	EA
A013	FRC-B	O	181	1036418			8465	010046225	BOATMAN'S PIPE	4	EA
A013	FRC-B	G	182	4049866	FX-85	X0049			DANFORTH FORTRESS ANCHOR	2	EA
A003	FRC-B	G	183	1032334			8330	002532508	LEATHER, CATTLEHIDE 5/32 IN.TH	6	SF
A003	FRC-B	G	184	1001866			4020	005997529	LINE, ORANGE, RING BOUY	2	CL
A013	FRC-B	O	185	1038803	MENS REG, NAVY				SECOND CHANCE SUMMIT FULL-WRAP LEVEL IIA	3	EA
A013	FRC-B	O	186	1038800	MENS LG, NAVY				SECOND CHANCE SUMMIT FULL-WRAP LEVEL IIA	4	EA
A013	FRC-B	O	187	1038801	MENS XL, NAVY				SECOND CHANCE SUMMIT FULL-WRAP LEVEL IIA	3	EA
A003	FRC-B	G	188	1051917	89419BLK/3060FAS	0YH99			NON-SKID MATERIAL 24 X 60	2	RO
A013	FRC-B	O	190	1037693			7920	005774744	SQUEEGEE-WINDOW 16"	2	EA
A013	FRC-B	O	191	1019724			7520	002987043	STENCIL SET, MARKETING	2	SE
A003	FRC-B	G	192	1030328			4020	002315878	TWINE, FIBROUS WAXED	2	LB
A003	FRC-B	O	193	1001683			4240	009264154	BELT, SAFETY	2	EA
A003	FRC-B	O	194	1046054	232	64249			BRACKET, HEAVING LINE	6	EA
A003	FRC-B	O	195	1066261	1299GOV3	X2236			CHAFE GEAR, CHAFE PRO SERIES	6	EA
A003	FRC-B	O	196	1066262	1299GOV06	X2236			CHAFE GEAR, CHAFE PRO SERIES	1	EA
A013	FRC-B	G	197	1001770			4020	002402160	CORD, FIBROUS 1 IN COTTON	1	CL
A013	FRC-B	G	198	1001925			4020	005513343	CORD-CTN 1/4 IN	1	RL
A013	FRC-B	G	199	1001771			4020	002402161	CORD-CTN 3/4 IN CRGM	1	RL
A013	FRC-B	G	200	1001869			4020	009681356	CORD-N 3-8 IN DIA	1	RL
A013	FRC-B	O	201	1002252	656299	X0049			DANFORTH ANCHOR CUTTER BOAT	1	EA
A003	FRC-B	O	202	1001939			5120	002238921	FID-TY 1-12 IN	1	EA
A013	FRC-B	Ø	203	4068228	Door	X0419			FUEL STATION DOOR	4	EA
A003	FRC-B	O	204	1001928			2040	002879644	GRAPNEL, MARINE	1	EA
A003	FRC-B	O	205	1058227	20 inch round	X0419			GRATE, HATCH ROUND	1	EA

Version	Hull	Outfit/ GUCL/ Repair Lkr/ CBR	ReqItem	CatNum	PartNum	CageNum	FSC	NIIN	Description	ReqQty	Unit
A003	FRC-B	O	206	1058226	26 inch square	X0419			GRATE, HATCH SQUARE	3	EA
A003	FRC-B	O	207	1046052	226	64249			HEAVING LINE	8	EA
A003	FRC-B	O	208	1051842	228	64249			HEAVING LINE W/ BALL	6	EA
A003	FRC-B	O	209	1046053	229	64249			HEAVING LINE, REPLACEMENT	6	EA
A003	FRC-B	O	210	1019455			8470	010927528	HELMET, GRND TRP PARA (LRG)	7	EA
A003	FRC-B	O	211	1014734			8470	010927527	HELMET, GRND TRP PARA (MED)	10	EA
A003	FRC-B	O	212	1019454			8470	010927526	HELMET, GRND TRP PARA (SMALL)	7	EA
A003	FRC-B	O	213	1036885			8415	009353132	HELMET, SAFETY (BLUE)	18	EA
A003	FRC-B	O	214	1001716			8415	009353139	HELMET, SAFETY (WHITE)	4	EA
A003	FRC-B	O	215	1001943			2040	002689251	HOOK BOAT 8 FT	1	EA
A013	FRC-B	O	216	1001929			2040	002689252	HOOK, BOAT 12 FT	2	EA
A003	FRC-B	O	217	1034375			8415	009140031	JERSEY FLIGHT DECK CREW RED	24	EA
A003	FRC-B	O	218	1001931	010296641		5120	010296641	KIT SPLICING 2 IN	1	KT
A003	FRC-B	O	219	1001946			5120	010318750	KIT SPLICING 4 IN	1	EA
A003	FRC-B	O	220	1001930			5120	010325464	KIT-SPLICING 1 IN	1	EA
A003	FRC-B	O	221	1001932			5120	010345158	KIT-SPLICING 2 3/4 IN	1	EA
A003	FRC-B	O	222	1026396			5110	005301757	KNIFE, MARLIN SPIKE	10	EA
A003	FRC-B	O	223	1001722			4240	000222521	LANYARD, SAFETY HAR	2	EA
A003	FRC-B	O	224	1001723			4240	000222518	LANYARD, SAFETY HAR 72"	2	EA
A013	FRC-B	G	225	1036128			4020	002387732	LINE 1.5" CIRC., NATURAL HEMP	1	CL
A013	FRC-B	G	226	1035690			1095	003342409	LINE, BUOYANT ORANGE	8	EA
A003	FRC-B	O	227	1001784			5120	002931136	MARLINSPIKE 12 IN	4	EA
A003	FRC-B	O	228	1001786			8315	001631545	NEEDLE-SAILMAKERS SZ 10	1	PG
A003	FRC-B	O	229	1001787			8315	001631547	NEEDLE-SAILMAKERS SZ 14	1	PG
A003	FRC-B	O	230	1001788			8315	001631551	NEEDLE-SAILMAKERS SZ 16	1	PG
A003	FRC-B	O	232	1001790			5120	002236837	PALM-SEWING TYPE 1	1	EA
A003	FRC-B	O	233	1001789			5120	002236838	PALM-SEWING TYPE 2	1	EA
A003	FRC-B	O	234	1036064			0000	XFC023492	POLYFOAM FENDER	6	EA
A003	FRC-B	O	236	1046055	265	64249			RESCUE ROPE REEL	2	EA
A003	FRC-B	O	237	1001731			4240	000222524	RESPIRATOR AIR FILT W/CART PAI	3	KT
A003	FRC-B	O	238	1001740			4220	002753157	RING-BUOY 30IN	6	EA
A013	FRC-B	G	239	1001868			4020	006180261	ROPE NYLON 3/4 IN 750 YDS	1	RL
A013	FRC-B	G	240	1016914			4020	004719336	ROPE, FIBROUS 3 IN CIRC 200YDS	2	EA
A013	FRC-B	G	241	1049280			4020	009681350	ROPE, FIBROUS YELLOW (POLYETHY	2	RL
A013	FRC-B	G	242	1001867			4020	005300698	ROPE-PYPR 1 IN CRCM ORANGE 300	1	RL
A013	FRC-B	O	243	1046061	458 SZ LARGE	64249			SAFETY HELMET (LARGE) CUTTER BOAT	5	EA
A013	FRC-B	O	244	1046062	458 SZ MED	64249			SAFETY HELMET (MED) CUTTER BOAT	5	EA
A003	FRC-B	O	245	1001989		13873	6850	002709986	SEA MAKER FLRSNT	1	BX
A013	FRC-B	G	247	1001870			4020	002402017	SEIZING STUFF	1	CL
A003	FRC-B	O	248	1001816			4030	002824885	SHACKLE-ACHR SCR PIN 5-16 IN	6	EA
A003	FRC-B	O	250	1001958			3940	008924375	SLING-CGO NET NYLON	2	EA
A003	FRC-B	O	251	1001872			5340	002754584	SNAP HOOK-SWV EYE TY1	4	EA
A003	FRC-B	O	252	1066821	1964032	X0510			THIMBLE, HAWSER, 1-1/2" CIRCUM	1	EA
A003	FRC-B	O	253	1066822	5964084	X0510			THIMBLE, HAWSER, 4" CIRCUMFERE	1	EA
A013	FRC-B	G	254	1001496			4020	002431554	TWINE, FIBROUS SZ 30	1	TU
A013	FRC-B	G	255	1001838			4020	002575395	TWINE-CTN WRAPPING 4 PLY	1	LB
A003	FRC-B	O	256	1001915			6605	002558316	WEIGHT, SOUNDING 7 LB	2	EA
A003	FRC-B	O	257	1059415			8465	219127031	WHISTLE NON-BALL, MULTI-TONE	60	EA
A003	FRC-B	G	258	1037712		25795	8105	011958730	BAG, PLASTIC 15 TO 25 LB CAPAC	2	BX
A003	FRC-B	G	259	1002230		25795	8105	011839768	BAG, PLASTIC 30 LB CAPACITY	2	BX
A003	FRC-B	G	260	1036672		80244	8105	008377757	BAG, PLASTIC ZIPLOCK 12IN X 12	1	BX
A003	FRC-B	G	261	1036673			8105	008377753	BAG, PLASTIC ZIPLOCK 4IN X 4IN	1	MX
A003	FRC-B	G	262	1036674			8105	008377755	BAG, PLASTIC ZIPLOCK 8IN X 8IN	1	MX
A013	FRC-B	O	263	1002386			5120	002241372	BAR PINCH 26"	1	EA
A003	FRC-B	G	264	1032654			6135	009857846	BATTERY, NONRECHARGE DRY, C-CE	1	PG
A003	FRC-B	G	265	1002310			6135	008357210	BATTERY, NONRECHARGE, D-CELL	1	PG
A003	FRC-B	G	266	1019893			7920	002915815	BRUSH WIRE, SCRATCH	4	EA
A003	FRC-B	G	267	1002231			7920	005142417	BRUSH, ACID SWABBING	1	GR
A003	FRC-B	G	268	1026469			7240	002865342	CAN, FLAMMABLE WASTE	2	EA
A003	FRC-B	G	269	1032068			8305	002222423	CLOTH, CHEESECLOTH	2	YD
A003	FRC-B	G	270	1031853			6850	002646573	DESICCANT ACT U/1 130 EA	1	CN
A013	FRC-B	O	271	1000868			6230	009693918	FILTER, LANTERN, ELECTRIC, RED	6	EA
A013	FRC-B	O	272	1028691			6230	002693034	FLASHLIGHT, EXPLOSION PROOF	2	EA

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A003	FRC-B	G	273	1037543			3439	002554568	FLUX, SOLDERING		1 LB
A003	FRC-B	G	274	1029079			7240	004049794	FUNNEL 1PT		2 EA
A003	FRC-B	G	275	1031937			7240	004049793	FUNNEL-1 QT PLASTIC		1 EA
A003	FRC-B	G	276	1031864			9150	001414481	GREASE, GENERAL PURPOSE, 14 OZ		1 CA
A003	FRC-B	G	277	1050665			9905	008660334	HOLDER, CARD-LABEL 11 3/4 X 9		2 PG
A003	FRC-B	G	278	1031851			7240	000606006	PAIL, UTILITY 10 QT PLASTIC		4 EA
A003	FRC-B	G	279	1031920			7240	009437105	PAIL, UTILITY 12 QT PLASTIC		4 EA
A003	FRC-B	G	280	1037345			4940	006840580	PARTS CLEANING CAN		1 EA
A003	FRC-B	G	281	1031905			9150	002617899	PENETRATING OIL		2 PT
A003	FRC-B	G	282	1031891		1NN58	7920	002053570	RAG, WIPING		2 BE
A013	FRC-B	O	283	1024001			5110	002939199	SHEARS, STRAIGHT TRIMMERS 7 IN		2 EA
A013	FRC-B	O	285	1036082			3439	006292697	SOLDERING AID TOOL TIP EACH EN		1 EA
A013	FRC-B	O	286	1036083			3439	006117136	SOLDERING AID TOOL TIP ONE END		1 EA
A013	FRC-B	O	287	1028748			3439	005420531	SOLDERING TORCH KIT		1 EA
A013	FRC-B	O	288	1031940			4240	005164527	SPECTACLES, INDUSTRIAL		3 PR
A013	FRC-B	O	289	1044633	SD340L2AL/MR	6T473			STORAGE CABINET		4 EA
A013	FRC-B	O	290	1044636	SEP3140AL	6T473			STORAGE CABINET		2 EA
A013	FRC-B	O	291	1044634	SEP3189AL	6T473			STORAGE CABINET		2 EA
A013	FRC-B	O	292	1044635	SEP3203AL	6T473			STORAGE CABINET		2 EA
A003	FRC-B	G	294	1029985			5975	009441499	STRAP, TIEDOWN, ELECTRICAL COM		1 HD
A003	FRC-B	G	297	1029877			5975	007275153	STRAP, TIEDOWN, ELECTRICAL COM		10 HD
A003	FRC-B	G	298	1031201			8030	008893535	TAPE, ANTI-SEIZE		4 EA
A013	FRC-B	O	299	1039358			6630	001051418	TESTER, ANTI-FREEZE		1 EA
A003	FRC-B	G	300	1019773			6850	000014194	WATER INDICATING PASTE		20 PG
A013	FRC-B	R	301	1002009			4210	007259234	3" HOSE ASSY NMTLC PUMP SUCTIO		4 EA
A003	FRC-B	O	302	1001680			8415	000826108	APRON-RUBBER		1 EA
A003	FRC-B	O	303	1028791			4240	000222946	AURAL PROTECTOR, SOUND		22 EA
A013	FRC-B	G	304	1038445		80244	8105	011839764	BAG, PLAST U/1 CONT 100 BGS		2 BX
A003	FRC-B	O	305	1002327			5120	002930665	BAR-WRKG 30 IN		1 EA
A013	FRC-B	G	306	1020872			6135	009857845	BATTERIES, AA		4 PG
A013	FRC-B	G	307	1001735			6135	001000413	BATTERY-DRY 6 VOLT		4 EA
A003	FRC-B	O	308	1002387			5120	002930019	BENDER SET-TB HAND		1 SE
A003	FRC-B	O	309	1040168	MODEL 810CG	X0028			BRACKET, AFFF FIRE EXTINGUISHE		2 EA
A003	FRC-B	O	310	1002392			7920	002247987	BRUSH, FILE CLEANER		2 EA
A003	FRC-B	O	311	1002391			5120	009265175	BRUSH-BATTERY WIRE		2 EA
A003	FRC-B	O	312	1002393			5140	000306617	CABINET, TOOL, MOBILE		1 EA
A003	FRC-B	O	313	1030468			6515	007740000	CANE WALKING		3 EA
A003	FRC-B	O	314	1032113			5110	003575593	CHISEL SET		1 SE
A003	FRC-B	O	315	1002400			5110	002211076	CHISEL-BSMITH HC TY 1		1 EA
A003	FRC-B	O	316	1027132			6630	010964792	COMPARATOR-VISCOSITY OIL		1 EA
A003	FRC-B	O	317	1002423			5110	002886520	CUTTER-TB 1-8 TO 1 1/8"		1 EA
A003	FRC-B	O	318	1002428			5210	002630376	DIVIDERS MECHANIC'S 8"		1 EA
A003	FRC-B	O	319	1001853			5120	002428673	DRIFTPIN-SGL PNT 1-2 IN		1 EA
A003	FRC-B	O	320	1002430			5133	004496775	DRILL SET 1 TO 60		1 SE
A003	FRC-B	O	321	1002433			5133	006187783	DRILL SET 1-16 TO 3-16		1 SE
A003	FRC-B	O	322	1002431			5133	002780230	DRILL SET-FRAC		1 SE
A003	FRC-B	O	323	1053491			5130	009357354	DRILL, ELECTRIC PORTABLE 3/8"		1 EA
A003	FRC-B	O	324	1002742			5130	002931849	DRILL-ELEC PORTABLE 1/2"		1 EA
A013	FRC-B	O	325	4066220	5560704338	D8266			EMERGENCY FUEL LINE		4 EA
A003	FRC-B	O	326	1001689			4240	002029473	FACESHIELD, IND		3 EA
A003	FRC-B	O	327	1002442			5110	005958317	FILE SET - 14 PC		1 SE
A003	FRC-B	O	328	1002443			5110	005958316	FILE SET - 6 PC		1 SE
A003	FRC-B	O	329	1031964			5110	005417999	FILE SET-HND		1 SE
A003	FRC-B	O	330	1002451			5120	006296258	FINGER-MECH		2 EA
A003	FRC-B	O	331	1066268	2089-4-4S	01276	4730	000358036	FITTING, 1/4" NPT 90 DEGREE		2 EA
A003	FRC-B	O	332	1066269	2089-6-4S	01276	4730	012217319	FITTING, 3/8" NPT 90 DEGREE		2 EA
A003	FRC-B	O	333	1066644	PM0618	X1613			FITTING, METRIC TO NPT REDUCER		2 EA
A003	FRC-B	O	334	1002452			5120	002512267	FLARING TOOL		1 EA
A003	FRC-B	O	335	1002454			7240	005279868	FUNNEL-1QT W FXD STRN		2 EA
A003	FRC-B	O	336	1002457			5210	002211999	GAGE-THKNS .0015-025"		1 EA
A003	FRC-B	O	338	1002459			5210	002211894	GAGE-TW DRLXTAP 1-60 RNG		1 EA
A003	FRC-B	O	339	1002460			5210	002383106	GAGE-WI CIR		1 EA
A003	FRC-B	O	340	1019776			5330	002391879	GASKET 3IN		2 EA

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A003	FRC-B	O	341	1002461			5210	002211986	GAUGE-THKNS SHORT	1	EA
A003	FRC-B	O	342	1002206			8415	010333519	GLOVES, CHEM RUB	1	PR
A003	FRC-B	O	343	1001702	TILLMAN 1200 GLOVE		0000	LLCJ56283	GLOVES, LTHR. WLD	2	PR
A003	FRC-B	O	344	1033423			8415	006344658	GLOVES, MENS CLOTH WK	10	PR
A003	FRC-B	O	345	1015114			8415	007536553	GLOVES, TOXIC	4	PR
A003	FRC-B	O	346	1001713			4240	002697912	GOGGLES-IND CVR TY CLEAR	10	PR
A003	FRC-B	O	347	1053897	1190K6	39428			GUN, GREASE	1	EA
A003	FRC-B	O	348	1019932			5120	000618543	HAMMER, BALL PEEN 1#	1	EA
A003	FRC-B	O	349	1025578			5120	000618541	HAMMER, BALL PEEN 8 OZ.	1	EA
A003	FRC-B	O	350	1053489			5120	010659037	HAMMER, DEAD BLOW	1	EA
A003	FRC-B	O	351	1001952			5120	002034656	HAMMER-HND ENG 2-1/2# SLEDGE	1	EA
A003	FRC-B	O	352	1019765			5120	000618545	HAMMER-MCHST 1-1/2 LB 16 OZ BA	2	EA
A003	FRC-B	O	353	1002472			5110	002630341	HANDLE FILE LG 5-1/2	1	EA
A003	FRC-B	O	354	1002474			5110	002630349	HANDLE, FILE 1-1/4" X	2	EA
A003	FRC-B	O	355	1002473			5110	002630342	HANDLE-FILE SM	2	EA
A003	FRC-B	O	356	1031367			5965	009408699	HEADSET-CHEST SET	2	EA
A003	FRC-B	O	357	1053738	334	0AJF6			HOIST-CHAIN 3/4 TON	1	EA
A003	FRC-B	O	358	1002480			5210	003905446	HOLDER-DIAL TEST IND	1	EA
A003	FRC-B	O	359	1028797			4720	012488822	HOSE, PORT WAT, 1-1/2FTX50, BL	1	EA
A003	FRC-B	O	360	1002309			5210	003776525	INDICATOR-DL W ACCY	1	EA
A003	FRC-B	O	361	1002294			6625	002433132	INDICATOR-PHASE SEQ	1	EA
A003	FRC-B	O	362	1049731	393506	0RF48			INLINE POTABLE WATER REGULATOR	1	EA
A013	FRC-B	R	363	1020092		X0849	4210	012734727	JUMPER HOSE 18 IN	2	AY
A003	FRC-B	O	364	1019791			5120	009354641	KEY SET, SOCKET HEAD	1	SE
A003	FRC-B	O	365	1031950	AV100	61400			KIT-HOLE SAW	1	KT
A003	FRC-B	O	366	1002487			5120	002211536	KNIFE, PUTTY 1-1/4"	5	EA
A003	FRC-B	O	367	1002484			5110	008925071	KNIFE-CRFTM 1-3/4" BL	1	EA
A003	FRC-B	O	368	1002485			5110	002407070	KNIFE-CRFTM 2-1/2" BL	1	EA
A003	FRC-B	O	369	1002488			5110	002211538	KNIFE-SRPG 3 IN W	1	EA
A003	FRC-B	O	370	1031359			6230	010677828	LIGHT, EXTENSION	1	EA
A003	FRC-B	O	372	1042157			5120	002933397	MALLET, RAWHIDE	2	EA
A003	FRC-B	O	373	1002024			4130	008140142	MANIFOLD, CHRNG& TEST, REFRG.	1	EA
A009	FRC-B	O	374	1049734	410860	0RF48			MARINE POTABLE WATER FILL HOSE	2	EA
A003	FRC-B	O	375	1002491			7240	002336025	MEASURE-LIQ 1 GAL	2	EA
A003	FRC-B	O	376	1026552			5120	010465079	METRIC HEX KEY SET	1	SE
A003	FRC-B	O	377	1002493			5120	002789926	MIRROR, INSPECTION	2	EA
A003	FRC-B	O	378	1002495			4930	001698275	OILER, HAND	1	EA
A003	FRC-B	O	379	1002357			5120	002771485	PIPE WRENCH 10"	1	EA
A003	FRC-B	O	380	1002597			5120	002771486	PIPE WRENCH, 14 IN	1	EA
A003	FRC-B	O	381	1049150			5120	002771479	PIPE WRENCH, 18"	1	EA
A003	FRC-B	O	382	1053490			5120	002771480	PIPE WRENCH, 24"	1	EA
A003	FRC-B	O	383	1022127			5120	002771484	PIPE WRENCH, 8 IN	1	EA
A003	FRC-B	O	384	1002499			5110	002398253	PLIERS, DIAGONAL 6 IN	2	EA
A003	FRC-B	O	385	1002501			5120	002683579	PLIERS, NEEDLE-NOSE 6"	2	EA
A003	FRC-B	O	386	1002504			5120	002780350	PLIERS, SLIP JOINT 5 IN	1	EA
A003	FRC-B	O	387	1002506			5120	002780351	PLIERS, SLIP JOINT 8 IN	2	EA
A003	FRC-B	O	388	1002502			5120	005959555	PLIERS-RET RG	1	EA
A003	FRC-B	O	389	1002503			5120	002398254	PLIERS-SIDE CUTTING LINEMAN'S	2	EA
A003	FRC-B	O	390	1002505			5120	002241567	PLIERS-SJ 6 IN	2	EA
A003	FRC-B	O	391	1002507			5120	002237396	PLIERS-SJ COMB 6 IN	2	EA
A003	FRC-B	O	392	1026993			5120	012894310	POP RIVETER SET	1	EA
A003	FRC-B	O	393	1040167	AMEREX 250CG	X0028			PORTABLE AFFF FIRE EXTINGUISHE	2	EA
A003	FRC-B	O	394	1001865			5120	002425966	PUNCH DR PIN STL 1-8 IN	1	EA
A003	FRC-B	O	395	1026377			5120	004081493	PUNCH SET, CTR SD	1	SE
A003	FRC-B	O	396	1002515			5120	008833003	PUNCH SET, DRIVE PIN	1	SE
A003	FRC-B	O	397	1001860			5120	003305869	PUNCH SET-ALGN	1	SE
A003	FRC-B	O	398	1001864			5110	005969604	PUNCH-CTG RVLG HD	1	EA
A003	FRC-B	O	399	1001861			5120	002420763	PUNCH-DRIFT 1-4 IN	1	EA
A003	FRC-B	O	401	1002028			4730	002870706	REDUCER, PIPE 1/4 X 1/8	1	EA
A003	FRC-B	O	402	1002524			5120	005454268	RETRIEVING TOOL MAG 18"	1	EA
A003	FRC-B	O	403	1002528			5210	002345223	RULE, STL MACHINIST 6"	1	EA
A003	FRC-B	O	404	1031442			5210	003625100	RULE-STL MACH 1-4"	1	EA
A003	FRC-B	O	405	1001495			4920	010030804	SAMPLING KIT, OIL	1	KT

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A003	FRC-B	O	406	1001512			6670	002405831	SCALE-DL IND 0-100		1 EA
A003	FRC-B	O	407	1002244			6515	009357138	SCISSORS, ANGULAR		1 EA
A003	FRC-B	O	408	1002532			5120	002888728	SCREW STARTER-HND 6"		1 EA
A003	FRC-B	O	409	1002537			5120	005423438	SCREWDRIVER-CRS TIP 8" #2		4 EA
A003	FRC-B	O	410	1002538			5120	002408716	SCREWDRIVER-CRS TIP SZ 1 3" #1		2 EA
A003	FRC-B	O	411	1002539			5120	002348913	SCREWDRIVER-CRS TIP SZ 2 4" #2		2 EA
A003	FRC-B	O	412	1002533			5120	002781276	SCREWDRIVER-FLAT TIP 12" .375		2 EA
A003	FRC-B	O	413	1026608			5120	002363242	SCREWDRIVER-FLAT TIP18" 1/2"		3 EA
A003	FRC-B	O	414	1002534			5120	002228852	SCREWDRIVER-FLT TIP 1/4 4" .25		1 EA
A003	FRC-B	O	415	1002540			5120	002933309	SCREWDRIVER-FLT TIP 10" .375		1 EA
A003	FRC-B	O	417	1002352			5120	002376985	SCREWDRIVER-FLT TIP 8" .375		2 EA
A003	FRC-B	O	418	1032397			5120	000229794	SCREWDRIVER-OFFSET 3" 1/4 90DE		1 EA
A003	FRC-B	O	419	1002543			5120	002872130	SCREWDRIVER-OFS 4 1/2" 1/4 90D		2 EA
A003	FRC-B	O	420	1002544			5120	002933159	SCREWDRIVER-SCR STRTG 6" .156		2 EA
A003	FRC-B	O	421	1002545			5120	002217063	SCRIBER, MACHINISTS		2 EA
A003	FRC-B	O	422	1002547			5110	002898659	SHEARS, METAL CUTTING		1 EA
A003	FRC-B	O	423	1002549			5110	002211085	SHEARS-MTL CTG HND 7"		1 EA
A003	FRC-B	O	424	1001506			5110	001616912	SHEARS-STR TRM		1 EA
A003	FRC-B	O	425	1031963			5120	005968622	SOCKE SET 1/2 DR DEEP SAE		1 SE
A003	FRC-B	O	426	1031962			5120	009357311	SOCKET SET, SOCKET W 1/2 SAE		1 SE
A003	FRC-B	O	427	1051666			5120	011138076	SOCKET SET, SOCKET WRENCH 1/2		1 SE
A003	FRC-B	O	428	1051669			5120	011159169	SOCKET SET, SOCKET WRENCH 1/4		1 SE
A003	FRC-B	O	429	1051667			5120	011129543	SOCKET SET, SOCKET WRENCH 3/8		1 SE
A003	FRC-B	O	430	1051668			5120	011173876	SOCKET SET, SOCKET WRENCH 3/8		1 SE
A003	FRC-B	O	431	1002553			4940	004941533	STETHOSCOPE-ENGR		1 EA
A003	FRC-B	O	432	1001907			6675	005144783	STRAIGHTEDGE, 18 IN		1 EA
A003	FRC-B	O	433	1026027			5120	002886578	STUD REMOVER		1 EA
A013	FRC-B	5	434	1053492			5210	011397444	TAPE MEASURE 25 FT		2 EA
A003	FRC-B	O	435	1019806			5210	002211886	TAPE SOUNDING 50		3 EA
A003	FRC-B	O	436	1002560			5210	002346745	TAPE-MES STL 50 FT		1 EA
A003	FRC-B	O	437	1002029			6685	002439963	THERMOMETER, 2 DEG. F. INCR		2 EA
A003	FRC-B	O	438	1002305			6685	002439964	THERMOMETER-RNG 0-160		2 EA
A003	FRC-B	O	439	1002562			5180	008563471	THREADING SET, SCREW		1 KT
A003	FRC-B	O	440	1002030			5140	002269018	TOOL BOX, PORTABLE		1 EA
A003	FRC-B	O	441	1002563			5140	003883416	TOOL BOX-PRTL STL		1 EA
A013	FRC-B	R	442	1002017		20266	4820	005402381	VALVE-FT		2 AY
A003	FRC-B	O	443	1051764	ACDC-600A	0VJ05			VOM AMPROBE		1 EA
A003	FRC-B	O	444	1035536			6625	013122930	VOM FLUKE 87		1 EA
A003	FRC-B	O	445	1002297			6625	012232980	VOM MEGGAR		1 EA
A003	FRC-B	O	446	1002025			6625	002840855	VOM MULTIMETER AMPROBE		1 EA
A003	FRC-B	O	447	1002566			5120	001487917	WR SET, COMB 5/16 TO 1SAE		2 SE
A003	FRC-B	O	448	1002575			5120	000812307	WREN. SET-SKT 1/2" DR		2 SE
A003	FRC-B	O	449	1051665			5120	011166047	WRENCH SET SOCKET METRIC 1/2		1 SE
A003	FRC-B	O	450	1051670			5120	011190010	WRENCH SET, COMBINATION BOX ME		1 SE
A003	FRC-B	O	451	1025584			5120	000812305	WRENCH SET-SKT 1/4" SAE		1 SE
A003	FRC-B	O	452	1052687	5473A11	39428			WRENCH, AC		1 EA
A003	FRC-B	O	453	1052688	5473A12	39428			WRENCH, AC		1 EA
A003	FRC-B	O	454	1002592			5120	002643795	WRENCH, ADJUSTABLE 6"		3 EA
A013	FRC-B	R	455	1019964			5120	004236728	WRENCH, OE ADJ 15"		4 EA
A003	FRC-B	O	456	1002594			5120	004941910	WRENCH, PLR 7 IN		2 EA
A003	FRC-B	O	458	1002590			5120	004498083	WRENCH-OE ADJ 10"		2 EA
A003	FRC-B	O	459	1002595			5120	002771477	WRENCH-PP 10"		1 EA
A003	FRC-B	O	460	1002572			5120	009060168	WRENCH-SET OPEN END METRIC		1 SE
A003	FRC-B	O	461	1002578			5120	002217983	WRENCH-TORQ 0-600FT LBS		1 EA
A003	FRC-B	G	462	1066662	VOLL-46955	X0506			2 TINE BUFFETWARE POT FORK NON		3 EA
A003	FRC-B	G	463	1036021			8415	000511173	APRON, FOOD HANDLER'S		2 PG
A013	FRC-B	O	464	1036023			7330	000785706	BOARD, FOOD CHOPPING 20IN		2 EA
A013	FRC-B	O	465	1036024			7330	009009861	BOARD, FOOD CHOPPING 24IN		2 EA
A013	FRC-B	O	466	1037630			7330	006855013	BOWL SET, FOOD MIXING		1 SE
A013	FRC-B	O	467	1036209			7350	001410959	BOWL, EATING 17OZ		3 DZ
A013	FRC-B	O	468	1036210			7350	000806062	BOWL, EATING 4 1/2 OZ		3 DZ
A013	FRC-B	O	469	1036025			7330	002622323	BOWL, FOOD MIXING 5 QT		4 EA
A013	FRC-B	O	470	1066663	TOWN-47311/s/s	X0506			CLEAVER, MEAT NON-WOOD		1 EA

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A013	FRC-B	O	471	1036026			7330	002667453	COLANDER		2 EA
A013	FRC-B	O	472	1037659			7350	001410971	CUP, DRINKING 10 OZ		3 DZ
A013	FRC-B	O	473	1036211			7350	006342864	CUP, DRINKING 8 OZ		3 DZ
A013	FRC-B	O	474	1037635		80244	7350	009261661	CUP, PLASTIC		2 BX
A013	FRC-B	O	475	1036027			7350	010479307	DISPENSER, COMPRESSIBLE BOTTLE		2 EA
A013	FRC-B	O	476	1066664	SSNH-357	X0506			DISPENSER, PAPER NAPKIN, STAIN		3 EA
A013	FRC-B	O	477	1028816			7350	006416050	DISPENSER, SUGAR 12 OZ, GLASS		3 EA
A013	FRC-B	O	478	1037661			7350	006874409	DISPENSER, SUGAR 9 OZ, GLASS		3 EA
A013	FRC-B	O	479	1037662			7350	007151369	DISPENSER, TOOTHPICK		1 EA
A013	FRC-B	O	480	1037641			7330	009844065	DOUBLE BOILER, COOKING		1 EA
A013	FRC-B	O	481	1036034			7330	002433408	EGG BEATER		2 EA
A013	FRC-B	O	482	1036048			8135	007240551	FOIL, METAL		1 RO
A013	FRC-B	O	483	1036195			7330	002050617	FOOD TURNER-HAMBURGER		2 EA
A013	FRC-B	O	484	1028864			7330	006341995	FOOD TURNER-SOLID 14 IN		1 EA
A013	FRC-B	O	485	1037642			7330	002562158	FOOD TURNER-SOLID 21 IN		1 EA
A013	FRC-B	O	486	1036183		80244	7340	002418169	FORK, TABLE		3 BX
A013	FRC-B	O	487	1036216			7330	002722518	GRATER, FOOD		1 EA
A013	FRC-B	O	488	1036035			7340	001971271	KNIFE, BOWNING		2 EA
A013	FRC-B	O	489	1037644			7340	005793303	KNIFE, BUTCHER'S 10 1/4 IN		2 EA
A013	FRC-B	O	490	1037645			7340	006802641	KNIFE, BUTCHER'S 14 1/4 IN		2 EA
A013	FRC-B	O	491	1037646			7340	002053335	KNIFE, BUTCHER'S 8 1/4 IN		2 EA
A013	FRC-B	O	492	1036036			7340	004887950	KNIFE, COOK'S		2 EA
A013	FRC-B	O	493	1036037			7340	004887939	KNIFE, PARING		3 EA
A013	FRC-B	O	494	1036038			7340	004066531	KNIFE, SLICING 12IN		2 EA
A013	FRC-B	O	495	1036039			7340	006800863	KNIFE, SLICING 12IN SCALLOPED		2 EA
A013	FRC-B	O	496	1068736					KNIFE, SLICING 6IN		2 EA
A013	FRC-B	O	497	1037759		80244	7340	000606057	KNIFE, TABLE		2 BX
A013	FRC-B	O	498	1036040			7330	002544793	LADLE, KITCHEN 2 OZ		2 EA
A013	FRC-B	O	499	1036041			7330	006800865	LADLE, KITCHEN 4 OZ		4 EA
A013	FRC-B	O	500	1028856			7330	002481153	LADLE, KITCHEN 8 OZ		2 EA
A013	FRC-B	O	501	1064274	71981256291	X2225			MASHER, POTATO HAND NON-WOODEN		1 EA
A013	FRC-B	O	502	1036154			7240	001387985	MEASURE, LIQUID 1 QT		2 EA
A013	FRC-B	O	503	1037637			7330	002053096	MEASURE, LIQUID 2 QT		2 EA
A013	FRC-B	O	504	1036029			7330	002727876	MEASURING SET, SPOON		2 EA
A003	FRC-B	G	505	1037710		80244	8540	002857001	NAPKIN, TABLE, PAPER		1 BX
A013	FRC-B	O	506	1036213			7330	002722591	OPENER, CAN, HAND		1 EA
A013	FRC-B	O	507	1037638			7330	002511515	OPENER, CAN, MOUNTED WALL		1 EA
A013	FRC-B	O	508	1028855			7330	002053164	PAN, BAKING AND ROASTING 13 1/2		4 EA
A013	FRC-B	O	509	1036180			7330	001430965	PAN, MUFFIN		2 EA
A013	FRC-B	O	510	1036030			7330	008236883	PAN, PIE		2 EA
A003	FRC-B	G	511	1049719		80244	8540	011699010	PAPER TOWEL, ROLL		1 BX
A013	FRC-B	O	512	1028808			7350	002495165	PITCHER, WATER 2 QT		2 EA
A013	FRC-B	O	513	1036214			7350	002053219	PLATE, EATING		3 DZ
A013	FRC-B	O	514	1036215		80244	7350	012636700	PLATE, PAPER 10 1/4 IN		1 BX
A013	FRC-B	O	515	1036196			7350	010953647	PLATTER, FOOD SERVING 14 IN		4 EA
A013	FRC-B	O	516	1037650			7330	003794439	POT HOLDER		8 EA
A013	FRC-B	O	517	1036185			7330	002054146	POT, COOKING 14 QT		2 EA
A013	FRC-B	O	518	1037652			7330	001539749	ROLLING PIN 12 IN		1 EA
A013	FRC-B	O	519	1036217			7350	006802630	SALT SHAKER		8 EA
A013	FRC-B	O	520	1036186			7330	006800857	SAUCEPAN 1 1/2 QT		4 EA
A013	FRC-B	O	521	1033367			7330	002402134	SAUCEPAN 2 QT		2 EA
A013	FRC-B	O	522	1036187			7330	006800858	SAUCEPAN 3 3/4 QT		4 EA
A013	FRC-B	O	523	1036188			7330	002402136	SAUCEPAN 5 QT		2 EA
A013	FRC-B	O	524	1036189			7330	002402137	SAUCEPAN 7 1/2 QT		3 EA
A013	FRC-B	O	525	1036044			7330	006416870	SCOOP, ICE CREAM, MECHANICAL		4 EA
A013	FRC-B	O	526	1028862			7330	001539760	SCOOP, KITCHEN		2 EA
A013	FRC-B	O	527	1036045			7340	002729586	SERVER, PIE AND CAKE		1 EA
A013	FRC-B	O	528	1060205	DEXT-S284-10/10	X0506			SPATULA 14 IN		4 EA
A013	FRC-B	O	529	1036191			7330	006802634	SPATULA 8 IN		4 EA
A013	FRC-B	O	530	1036192			7340	002407079	SPOON, FOOD SERVICE 13 IN		3 EA
A013	FRC-B	O	531	1036193			7340	002550702	SPOON, FOOD SERVICE PERFORATED		3 EA
A013	FRC-B	O	532	1028851			7340	002051421	SPOON, FOOD SERVICE SLOTTED		3 EA
A013	FRC-B	O	533	1028906		80244	7340	002053341	SPOON, TABLE		3 BX

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A013	FRC-B	O	534	1036194		80244	7340	002053340	SPOON, TEA		3 BX
A013	FRC-B	O	535	1049711	K45SSWH	X2020			STAND MIXER		1 EA
A013	FRC-B	O	536	1059301	DEXT-14SXL/14	X0506			STEEL KNIFE SHARPENER NON-WOOD		1 EA
A013	FRC-B	O	537	1037653	026-8852	X1632	7340	007355565	STIRRING STICK, BEVERAGE		1 BX
A013	FRC-B	O	538	1060206	AMMC-CC-8-F/CHINA CAP	X0506			STRAINER, POT CHINA CAP NON-W		1 EA
A013	FRC-B	O	539	1036042			7330	006161000	TONGS, FOOD SERVING 6 IN		2 EA
A013	FRC-B	O	540	1036043			7330	006160998	TONGS, FOOD SERVING 9 IN		4 EA
A013	FRC-B	O	541	1037649			7350	001410965	TUMBLER, DRINKING		3 DZ
A013	FRC-B	O	542	1053606			7520	010059136	BASKET, WASTEPAPER PLASTIC		15 EA
A013	FRC-B	O	543	1037656			7210	002301041	BED COVER, MATTRESS 77 1/2 X 3		24 EA
A013	FRC-B	O	544	1036012			7210	010155190	BED PILLOW		28 EA
A013	FRC-B	O	545	1037658			7210	011196416	BED SHEET		6 DZ
A013	FRC-B	O	546	1037655			7210	004082800	BED SPREAD		25 EA
A013	FRC-B	O	547	1028708			7210	002312373	BED, PILLOWCASE		35 EA
A013	FRC-B	O	549	1051655			7920	014588208	BROOM		2 EA
A013	FRC-B	O	550	1028888			7920	002406358	BRUSH, DUSTING, BENCH		2 EA
A013	FRC-B	O	551	1028886			7920	007725800	BRUSH, SANITARY		5 EA
A013	FRC-B	O	552	1026294			7920	002407171	BRUSH, SCRUB DECK		4 EA
A013	FRC-B	O	553	1028722			7920	002407174	BRUSH, SCRUB SQUARE END-2 3/4		2 EA
A013	FRC-B	O	554	1024258			7910	007205541	CLEANER, VACUUM, ELECTRIC		2 EA
A003	FRC-B	G	555	1037695		80244	7920	000449281	CLOTH, CLEANING		2 BX
A003	FRC-B	G	556	1037756			6840	007216055	DEODORANT, GENERAL PURPOSE		5 CN
A013	FRC-B	O	557	1028826			7290	002248308	DUSTPAN, STEEL		4 EA
A003	FRC-B	G	558	1051653			7930	013268110	GLASS CLEANER		1 DZ
A013	FRC-B	O	559	1028967			7920	002630328	HANDLE, ACME THREADED END USE		2 EA
A013	FRC-B	O	560	1028968			7920	001415452	HANDLE, BRUSH		2 EA
A013	FRC-B	O	561	1066533			7920	009265146	HANDLE, EXTENSION		2 EA
A013	FRC-B	O	562	1066534			7920	004906046	KIT, AIRCRAFT CLEANING		2 KT
A013	FRC-B	O	563	1058223	F5412-LG	1NBA3			LG FLEECE LINER		10 EA
A013	FRC-B	O	564	1058218	F5406-LG	1NBA3			LG FOUL WEATHER PARK		10 EA
A003	FRC-B										
A013	FRC-B	O	566	1058220	F5412-MED	1NBA3			MED FLEECE LINER		6 EA
A013	FRC-B	O	567	1058215	F5406-MED	1NBA3			MED FOUL WEATHER PARK		6 EA
A013	FRC-B	O	568	1051656			7920	013837799	MOP		4 EA
A003	FRC-B	G	569	1051671			7920	013837927	MOP REFILL		2 PG
A003	FRC-B	G	570	1037691			7920	001516120	PAD, SCOURING		2 PG
A003	FRC-B	G	571	1037691			7920	001516120	PAD, SCOURING 12 IN		1 PG
A003	FRC-B	G	572	1037692			7920	007535242	PAD, SCOURING 6 IN		3 PG
A003	FRC-B	G	573	1031942		80244	8540	005303770	PAPER, TOILET		2 BX
A013	FRC-B	O	578	1037657			7220	006341601	SHOWER MAT, FLOOR		6 EA
A013	FRC-B	O	579	1058222	F5412-SM	1NBA3			SM FLEECE LINER		2 EA
A013	FRC-B	O	580	1058217	F5406-SM	1NBA3			SM FOUL WEATHER PARK		2 EA
A003	FRC-B	G	581	1036631			7920	008841115	SPONGE, CELLULOSE		12 EA
A003	FRC-B	G	582	1037721		80244	8540	007935425	TISSUE, FACIAL WHITE		2 BX
A013	FRC-B	O	583	1058221	F5412-XL	1NBA3			XL FLEECE LINER		6 EA
A013	FRC-B	O	584	1058216	F5406-XL	1NBA3			XL FOUL WEATHER PARK		6 EA
A013	FRC-B	O	585	1058219	F5412-XXL	1NBA3			XXL FLEECE LINER		2 EA
A013	FRC-B	O	586	1058214	F5406-XXL	1NBA3			XXL FOUL WEATHER PARK		2 EA
A013	FRC-B	G	588	1038172			6510	009268883	ADHESIVE TAPE, 2"		1 EA
A003	FRC-B	O	589	1038279		6M644	6505	003888772	AL/MG HYDROX W/ SIMETH CAB		1 BX
A003	FRC-B	O	590	1038282		X1202	6505	001009985	ASPIRIN TABS		8 BT
A003	FRC-B	O	591	1037798	MC557000	7T923			BAGS, BODY		2 EA
A003	FRC-B	O	592	1037797			6510	009355822	BANDAGE, ELASTIC		1 PG
A003	FRC-B	O	593	1037848			6515	010394884	BLOOD PRESSURE CUFF		1 EA
A003	FRC-B	O	594	1044292			6545	001161410	BOXES, FIRST AID		8 EA
A003	FRC-B	O	595	1030841			7920	000610038	BRUSH, SCRUB HANDHELD		2 EA
A003	FRC-B	O	596	1037360	EMT BURN KIT (COAST GUARD)	04DF1			BURN DRESSING		1 EA
A003	FRC-B	O	597	1038281		X1202	6505	006874534	CALAMINE LOTION USP		4 BT
A003	FRC-B	O	598	1038284			6505	011716051	CETYLPRIIDIUM/BENZOCAINE		1 PG
A003	FRC-B	O	599	1038283		7T923	6505	001352881	CHARCOAL ACTIVATED		3 BT
A003	FRC-B	O	600	1037774	MA 1502	7T923			CYLINDERS		3 EA
A003	FRC-B	O	601	1048996	36526AT	5S573			DISPOSABLE SCALPEL #15		2 EA
A003	FRC-B	O	602	1029261			6510	002017430	DRESSING, 4" X 7"		3 EA

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A003	FRC-B	O	603	1037789	LP 710	7T923			EXTRICATION		1 EA
A003	FRC-B	O	604	1028691			6230	002693034	FLASHLIGHT		1 EA
A003	FRC-B	O	605	1037801	PL006930	7T923			GLUCOSE GEL 80 GR.		1 EA
A003	FRC-B	O	606	1038571	BU92000	7T923			ISOLATION, BODY		1 KT
A003	FRC-B	O	607	1037799	MFSY 911	7T923			LATEX GLOVES		2 BX
A003	FRC-B	O	609	1037795	FW 519	7T923			MOUNTING BRACKETS, OXYGEN CYL.		4 EA
A003	FRC-B	O	610	1030395			6510	002011755	MUSLIN, 37"X 37"X 52"		3 EA
A003	FRC-B	O	611	1058905	460205	X2211			NYLON TRAUMA BAG		3 EA
A003	FRC-B	O	612	1037796	HO 1173	7T923			OROPHARYNGEAL AIRWAY KIT		1 EA
A003	FRC-B	O	614	1037336	LM820011	7T923			POCKET MASK		1 EA
A003	FRC-B	O	615	1047294	SN732	1JL59			RES-Q-VAC		1 EA
A003	FRC-B	O	616	1037773	LSP 175-030R	7T923			RESUSCITATOR		1 EA
A003	FRC-B	O	617	1037781			6515	012254681	SAM SPLINTS		2 EA
A003	FRC-B	O	618	1002244			6515	009357138	SCISSORS, ANGULAR		1 EA
A003	FRC-B	O	619	1037777			6530	011991969	SPLINT, BODY		1 EA
A003	FRC-B	O	620	1037460	S-304	64511			SPLINT, TRACT		1 EA
A003	FRC-B	O	621	1037794			6515	009354088	STETHOSCOPE		1 EA
A003	FRC-B	O	622	1037854	LM3000	7T923			STIF-NECK COLLAR, NO NECK		1 EA
A003	FRC-B	O	623	1037855	LM4000	7T923			STIF-NECK COLLAR, REGULAR		1 EA
A003	FRC-B	O	624	1037856	LM5000	7T923			STIF-NECK COLLAR, SHORT		1 EA
A003	FRC-B	O	625	1037857	LM6000	7T923			STIF-NECK COLLAR, TALL		1 EA
A003	FRC-B	O	626	1037444			4220	014831934	STOKES LITTER		1 EA
A003	FRC-B	O	627	1038572			6515	001491405	THERMOMETER, CLINICAL		1 EA
A003	FRC-B	O	628	1037873			6515	001394593	THERMOMETER, SUB-NORMAL		1 EA
A003	FRC-B	O	629	1037775	TP890	7T923			THOMAS AREOMEDICAL PACK		1 EA
A003	FRC-B	G	630	1046153	CG STANDARD 1 3/4 INCH VINYL LETTE	X1811			2" VINYL LETTERING FOR FLAG BO		2 PG
A003	FRC-B	G	631	1046154	PORT SIDE SUPERSTRUCT	X1811			6" VINYL LETTERING IN HELBETIC		2 PG
A003	FRC-B	G	632	1046155	STBRD SIDE SUPERSTRUCT	X1811			6" VINYL LETTERING IN HELBETIC		2 PG
A003	FRC-B	G	633	1049720			7510	014070469	BINDER LOOSE LEAF		12 EA
A003	FRC-B	G	635	1036142			7510	012034708	BINDER, LOOSE-LEAF PLASTIC, VI		12 EA
A003	FRC-B	G	636	1037700			7530	002223525	BOOK, MEMORANDUM 10 1/2 X 8		12 EA
A003	FRC-B	G	637	1036465			7690	008513116	DECAL, 27IN		4 EA
A003	FRC-B	G	638	1032070			7510	002237044	ERASER, RUBBER ARTIST'S & DRAF		1 DZ
A003	FRC-B	G	640	1051658	BROTHER TZ 1/2IN				LABELER TAPE		15 EA
A003	FRC-B	G	641	1036101			7520	009044476	MARKER, TUBE TYPE FELT CHISEL,		1 DZ
A003	FRC-B	G	642	1036103			7520	005581501	MARKER,ASSORTMENT, TUBE TYPE		3 SE
A003	FRC-B	G	643	1037708			7530	002237939	NOTEBOOK, STENOGRAPH		1 PG
A003	FRC-B	G	644	1002240			7530	011245660	PAD, WRITING PAPER 8.5 X 11, W		1 DZ
A003	FRC-B	G	645	1029880			5340	002920906	PADLOCK SET		1 SE
A003	FRC-B	G	646	1037702		80244	7530	002900599	PAPER, BOND 8 1/2 X 11		1 BX
A003	FRC-B	G	647	1037292		80244	7530	002246754	PAPER, DUPLICATING, COPY WHITE		1 BX
A003	FRC-B	G	648	1019811			7520	009357136	PEN, BALL-POINT		6 DZ
A003	FRC-B	G	649	1022318			7520	001626178	PENCIL SHARPENER		1 EA
A003	FRC-B	G	650	1036140			7510	002815234	PENCIL-#2		4 DZ
A003	FRC-B	G	651	1019871			7510	002401526	PENCIL-BLACK-EXTRA THICK		1 DZ
A003	FRC-B	G	652	1037673			7510	001743205	PENCIL-RED-EXTRA THICK		1 DZ
A003	FRC-B	G	653	1037751			7510	002644612	PENCIL-YELLOW-EXTRA THICK		1 DZ
A003	FRC-B	G	654	1037675			7520	002247589	PERFORATOR, PAPER, DESK 2 HOLE		3 EA
A003	FRC-B	G	655	1037676			7520	001632563	PERFORATOR, PAPER, DESK 3 HOLE		3 EA
A003	FRC-B	G	656	1037720		80244	9330	006187215	PLASTIC SHEET, PRESSURE SENSIT		2 BX
A003	FRC-B	G	657	1037677		80244	7510	002337686	PROTECTOR, DOCUMENT TRANSPAREN		1 BX
A003	FRC-B	G	658	1037679		80244	7510	002051439	RUBBER BAND-NO. 16		2 BG
A003	FRC-B	G	659	1037680		80244	7510	002433435	RUBBER BAND-NO. 64		2 BG
A003	FRC-B	G	660	1038655	XSTAMPER FOUO	X0039		XFC021234	RUBBER STAMP "FOUO"		2 EA
A003	FRC-B	G	661	1028830			7510	001616215	RULER, WOOD		4 EA
A003	FRC-B	G	662	1022335			7520	002815895	STAPLER		6 EA
A003	FRC-B	G	663	1032331			7520	002431780	STAPLER, PAPER FASTENING, OFFI		2 EA
A003	FRC-B	G	664	1036138		80244	7510	002729662	STAPLES, PAPER FASTENING, OFFI		2 BX
A003	FRC-B	G	665	1037686		80244	7510	002729409	STAPLES, PAPER FASTENING, OFFI		2 BX
A003	FRC-B	G	666	1037682			7510	002726887	THUMB TACK		2 HD
A003	FRC-B	O	667	1001967			2090	000596377	BAG, DOC SK		1 EA
A003	FRC-B	O	668	1025560	7107520 7x50BIF		6650	002242555	BINOCULAR		8 EA
A003	FRC-B	O	669	1031664			0000	LLCNB1515	BINOCULARS HND HELD		1 EA

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A003	FRC-B	O	670	1032406			0000	LLCNB0453	CALCULATOR		4 EA
A003	FRC-B	O	673	1066690			6760	013793139	CASE, PHOTOGRAPHIC EQUIPMENT		1 EA
A003	FRC-B	O	674	1001889			6675	002860602	DRAFTING INSTRUMENT SET		2 SE
A003	FRC-B	O	675	1001509			5130	005968404	ETCHER-ELEC		1 EA
A003	FRC-B	O	676	1002132			8345	002420277	FLAG, ANCHORAGE		1 EA
A003	FRC-B	O	678	1002137			8345	009146087	FLAG, BLACK		1 EA
A003	FRC-B	O	679	1002109			8345	009350632	FLAG, CODE 0		2 EA
A003	FRC-B	O	680	1006405			8345	009350626	FLAG, CODE 1		2 EA
A003	FRC-B	O	681	1002112			8345	009351838	FLAG, CODE 2		2 EA
A003	FRC-B	O	682	1002114			8345	009350627	FLAG, CODE 3		2 EA
A003	FRC-B	O	683	1002116			8345	009266800	FLAG, CODE 4		2 EA
A003	FRC-B	O	684	1002118			8345	009350628	FLAG, CODE 5		2 EA
A003	FRC-B	O	685	1006406			8345	009350629	FLAG, CODE 6		2 EA
A003	FRC-B	O	686	1002121			8345	009350407	FLAG, CODE 7		2 EA
A003	FRC-B	O	687	1002123			8345	009350630	FLAG, CODE 8		2 EA
A003	FRC-B	O	688	1002125			8345	009350631	FLAG, CODE 9		2 EA
A003	FRC-B	O	689	1002142			8345	009353198	FLAG, CORPEN		1 EA
A003	FRC-B	O	690	1002144			8345	009351841	FLAG, DESIGNATION		1 EA
A003	FRC-B	O	691	1002107			8345	009261548	FLAG, DIVISION		1 EA
A003	FRC-B	O	692	1002145			8345	009350413	FLAG, EMERGENCY		1 EA
A003	FRC-B	O	693	1002149			8345	002601153	FLAG, FLOTILLA		1 EA
A003	FRC-B	O	694	1002151			8345	008251819	FLAG, FORMATION		1 EA
A003	FRC-B	O	695	1002153			8345	008251818	FLAG, INTERROGATIVE		1 EA
A003	FRC-B	O	696	1002156			8345	009353200	FLAG, NEGATIVE		1 EA
A003	FRC-B	O	697	1002127			8345	009261552	FLAG, PORT		2 EA
A003	FRC-B	O	698	1002157			8345	009261551	FLAG, PREPARATIVE		1 EA
A003	FRC-B	O	699	1002129			8345	009467899	FLAG, SEMAPHORE		2 EA
A003	FRC-B	O	700	1002181			8345	009350416	FLAG, SPEED		1 EA
A003	FRC-B	O	701	1002130			8345	009261549	FLAG, SQUADRON		1 EA
A003	FRC-B	O	702	1002186			8345	009269211	FLAG, STATION		1 EA
A003	FRC-B	O	703	1002187			8345	009350419	FLAG, SUBDIVISION		1 EA
A003	FRC-B	O	704	1002193			8345	009351843	FLAG, TURN		1 EA
A003	FRC-B	O	705	1002050			8345	006561434	FLAG-NATL USA SZ 11		3 EA
A003	FRC-B	O	706	1002051			8345	006561435	FLAG-NATL USA SZ 9		2 EA
A003	FRC-B	O	707	1002053			8345	006561446	FLAG-NATL USA UN JACK SZ 9		2 EA
A003	FRC-B	O	708	1031994			8345	014528114	FLAG-POW/MIA		1 EA
A003	FRC-B	O	709	1002056			8345	009350464	FLAG-SNL ALPHA CODE A SZ 8		2 EA
A003	FRC-B	O	710	1002058			8345	009350465	FLAG-SNL ALPHA CODE B SZ 8		2 EA
A003	FRC-B	O	711	1002060			8345	009350466	FLAG-SNL ALPHA CODE C SZ 8		2 EA
A003	FRC-B	O	712	1002062			8345	009350467	FLAG-SNL ALPHA CODE D SZ 8		2 EA
A003	FRC-B	O	713	1002064			8345	009350468	FLAG-SNL ALPHA CODE E SZ 8		2 EA
A003	FRC-B	O	714	1002066			8345	009350469	FLAG-SNL ALPHA CODE F SZ 8		2 EA
A003	FRC-B	O	715	1002068			8345	009350470	FLAG-SNL ALPHA CODE G SZ 8		2 EA
A003	FRC-B	O	716	1002070			8345	009350471	FLAG-SNL ALPHA CODE H SZ 8		2 KT
A003	FRC-B	O	717	1002072			8345	009350472	FLAG-SNL ALPHA CODE I SZ 8		2 EA
A003	FRC-B	O	718	1002074			8345	009350473	FLAG-SNL ALPHA CODE J SZ 8		2 EA
A003	FRC-B	O	719	1002076			8345	009350474	FLAG-SNL ALPHA CODE K SZ 8		2 EA
A003	FRC-B	O	720	1031995			8345	009350475	FLAG-SNL ALPHA CODE L SZ 8		2 EA
A003	FRC-B	O	721	1002079			8345	009350476	FLAG-SNL ALPHA CODE M SZ 8		2 EA
A003	FRC-B	O	722	1002081			8345	009350477	FLAG-SNL ALPHA CODE N SZ 8		2 EA
A003	FRC-B	O	723	1002083			8345	009350478	FLAG-SNL ALPHA CODE O SZ 8		2 EA
A003	FRC-B	O	724	1002085			8345	009350479	FLAG-SNL ALPHA CODE P SZ 8		2 EA
A003	FRC-B	O	725	1002087			8345	009350480	FLAG-SNL ALPHA CODE Q SZ 8		2 EA
A003	FRC-B	O	726	1002089			8345	009350481	FLAG-SNL ALPHA CODE R SZ 8		2 EA
A003	FRC-B	O	727	1002091			8345	009350482	FLAG-SNL ALPHA CODE S SZ 8		2 EA
A003	FRC-B	O	728	1002093			8345	009350483	FLAG-SNL ALPHA CODE T SZ 8		2 EA
A003	FRC-B	O	729	1002095			8345	009350484	FLAG-SNL ALPHA CODE U SZ 8		2 EA
A003	FRC-B	O	730	1002097			8345	009350485	FLAG-SNL ALPHA CODE V SZ 8		2 EA
A003	FRC-B	O	731	1002099			8345	009350486	FLAG-SNL ALPHA CODE W SZ 8		2 EA
A003	FRC-B	O	732	1002101			8345	009350487	FLAG-SNL ALPHA CODE X SZ 8		2 EA
A003	FRC-B	O	733	1002103			8345	009350488	FLAG-SNL ALPHA CODE Y SZ 8		2 EA
A003	FRC-B	O	734	1002105			8345	009350489	FLAG-SNL ALPHA CODE Z SZ 8		2 EA
A003	FRC-B	O	735	1002134	GSP0274		8345	002420274	FLAG-USCG ENSIGN SZ 4		1 EA

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A003	FRC-B	O	736	1002133	GSP0275		8345	002420275	FLAG-USCG ENSIGN SZ 5	3	EA
A003	FRC-B	O	737	1031996			8345	011681145	FLAG-USCG RR ADM LH	1	EA
A003	FRC-B	O	738	1031997			8345	002420272	FLAG-USCG RR ADM UH	1	EA
A003	FRC-B	O	739	1031998			8345	002420268	FLAG-USCG VICE ADM	1	EA
A003	FRC-B	O	740	1001898			6230	002234547	FLASHLIGHT PENLIGHT	6	EA
A003	FRC-B	O	741	1001715			4240	000222522	HARNESS, SAFETY, INDU	2	EA
A003	FRC-B	O	742	1002296			6685	009284974	KIT, METER, AIR VELOCITY	1	EA
A003	FRC-B	O	743	1051657	BRT-PT1910	X0039			LABEL MACHINE	1	EA
A003	FRC-B	O	745	1032410			0000	LLCNA5945	PAPER SHREDDING MACH.	1	EA
A013	FRC-B	Ø	746	4049713	AYTP08208	X1432			PAPER, WEATHER FAX	6	RO
A003	FRC-B	O	747	1002147			8345	009350537	PENNANT-1ST SUBST. SZ 8	1	EA
A003	FRC-B	O	748	1002159			8345	009350538	PENNANT-2ND SUBST SZ 8	1	EA
A003	FRC-B	O	749	1002135			8345	009350534	PENNANT-ANSWERING	2	EA
A003	FRC-B	O	750	1002138			8345	002335541	PENNANT-BURGEE COM SZ 8	1	EA
A003	FRC-B	O	751	1002139			8345	004805837	PENNANT-CHURCH SZ 4	1	EA
A003	FRC-B	O	752	1002149			8345	002601153	PENNANT-FLOTIALLA SZ 8	1	EA
A003	FRC-B	O	753	1002183			8345	009350418	PENNANT-STARBOARD SZ 8	1	EA
A003	FRC-B	O	754	1002161			8345	009350504	PEN-SNL NMRCL CODE 0 SZ 8	2	EA
A003	FRC-B	O	755	1002163			8345	009350496	PEN-SNL NMRCL CODE 1 SZ 8	2	EA
A003	FRC-B	O	756	1002165			8345	009266022	PEN-SNL NMRCL CODE 2 SZ 8	2	EA
A003	FRC-B	O	757	1002167			8345	009350497	PEN-SNL NMRCL CODE 3 SZ 8	2	EA
A003	FRC-B	O	758	1002169			8345	009350498	PEN-SNL NMRCL CODE 4 SZ 8	2	EA
A003	FRC-B	O	759	1002171			8345	009350499	PEN-SNL NMRCL CODE 5 SZ 8	2	EA
A003	FRC-B	O	760	1002173			8345	009350500	PEN-SNL NMRCL CODE 6 SZ 8	2	EA
A003	FRC-B	O	761	1002175			8345	009350501	PEN-SNL NMRCL CODE 7 SZ 8	2	EA
A003	FRC-B	O	762	1002177			8345	009350502	PEN-SNL NMRCL CODE 8 SZ 8	2	EA
A003	FRC-B	O	763	1002179			8345	009350503	PEN-SNL NMRCL CODE 9 SZ 8	2	EA
A003	FRC-B	O	764	1002191			8345	009350540	PENT-3RD SUBST SZ 8	2	EA
A003	FRC-B	O	765	1002190			8345	009350541	PENT-SUBST, NAVY SZ 8	1	EA
A003	FRC-B	O	766	1002195	GSP2606		8345	002602606	PENT-USCG COMISS SZ 7	8	EA
A003	FRC-B	O	767	1001902			6605	000166315	PLOTTER, PARALINE	2	EA
A003	FRC-B	O	768	1001904			6675	001911508	RULER, PARALLEL FLDG, 15IN	1	EA
A003	FRC-B	O	769	1028842			8345	001740453	SHAPE, DAY MARITIME, BALL, BLK	3	EA
A003	FRC-B	O	770	1002197			8345	011011101	SHAPE, DAY MARITIME, DIAM	3	EA
A003	FRC-B	O	771	1001906			6605	003911110	SLIDE RULE, NAUTICAL	1	EA
A003	FRC-B	O	772	1001910			6675	001905852	TRIANGLE DRAFTING 12 IN	1	EA
A003	FRC-B	O	773	1001911			6675	001905864	TRIANGLE DRAFTING 12 IN	1	EA
A003	FRC-B	O	774	1001489			6645	001260286	WATCH-STOP	2	EA
A003	FRC-B	O	777	1052363	NB30Z SIZE 8	4R507			BOOTIES	1	PR
A003	FRC-B	O	778	1052385	NB30Z SIZE 9	4R507			BOOTIES	1	PR
A003	FRC-B	O	779	1052386	NB30Z SIZE 10	4R507			BOOTIES	1	PR
A003	FRC-B	O	780	1052387	NB30Z SIZE 11	4R507			BOOTIES	1	PR
A003	FRC-B	O	781	1052365	MSD560	1CJ91			DRY SUIT (SWIMMER)	2	EA
A003	FRC-B	O	782	1052360	T-CG1920 LARGE	4R507			FULL WETSUIT (LARGE)	1	EA
A003	FRC-B	O	783	1052361	T-CG1920 X-LARGE	4R507			FULL WETSUIT (X-LARGE)	1	EA
A003	FRC-B	O	784	1046987			4220	012251611	MASK UNDERWATER	2	EA
A003	FRC-B	O	785	1052364	NG50Z SMALL	4R507			NEOPRENE GLOVES	1	PR
A003	FRC-B	O	786	1052388	NG50Z MEDIUM	4R507			NEOPRENE GLOVES	1	PR
A003	FRC-B	O	787	1052389	NG50Z LARGE	4R507			NEOPRENE GLOVES	1	PR
A003	FRC-B	O	788	1054007	NG50Z X-LARGE	4R507			NEOPRENE GLOVES	1	PR
A003	FRC-B	O	790	1052359	T-CG1850 X-LARGE	4R507			SHORTY WET SUIT (EXTRA LARGE)	1	EA
A003	FRC-B	O	791	1052358	T-CG1850 LARGE	4R507			SHORTY WET SUIT (LARGE)	1	EA
A003	FRC-B	O	792	1046988			4220	012276018	SNORKEL DIVERS	2	EA
A003	FRC-B	O	793	1052383	CGH50V-L	4R507			SURF CAP (LARGE)	2	EA
A003	FRC-B	O	794	1052362	CGH50V-M	4R507			SURF CAP (MED)	1	EA
A003	FRC-B	O	795	1052384	CGH50V-XL	4R507			SURF CAP (X-LARGE)	1	EA
A003	FRC-B	O	796	1046063	486-CG	64249			SWIMMERS HARNESS, LIFEVEST WIT	2	EA
A003	FRC-B	O	797	1046065	555	64249			TORPEDO BUOY	2	EA
A003	FRC-B	O	798	1062964	11114	X2320			ADHESIVE, AQUASEAL	6	OZ
A003	FRC-B	O	799	1020872			6135	009857845	BATTERY, ALKA AA 1.5V	5	PG
A013	FRC-B	O	801	4048964	316	64249			STROBE LIGHT, FIREFLY III	60	EA
A003	FRC-B	O	802	1052391	4MIL CGS/OB LARGE	X2001			DRY SUITS (LARGE)	4	EA
A003	FRC-B	O	803	1052390	4MIL CGS/OB MEDIUM	X2001			DRY SUITS (MEDIUM)	2	EA

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A003	FRC-B	O	804	1052392	4MIL CGS/OB X-LARGE	X2001			DRY SUITS (X-LARGE)	2	EA
A003	FRC-B	O	805	1044981	327 CG SZ LG/ORANGE	64249			EXPOSURE SUIT COVERALLS (LARGE	10	EA
A003	FRC-B	O	806	1044982	327 CG MEDIUM---ORANGE	64249			EXPOSURE SUIT COVERALLS (MEDIU	8	EA
A003	FRC-B	O	807	1046110	327 CG SZ SM/ORANGE	64249			EXPOSURE SUIT COVERALLS (SMALL	2	EA
A003	FRC-B	O	808	1044984	327 CG SZ XL/ORANGE	64249			EXPOSURE SUIT COVERALLS (X-LAR	8	EA
A003	FRC-B	O	809	1034371	0C4000	64249			IMMERSION SUIT (ADULT)	25	EA
A003	FRC-B	O	810	1040810			4220	012783007	KNIFE	12	EA
A003	FRC-B	O	811	1058397			4220	014872932	LIFE PRESERVER	25	EA
A003	FRC-B	O	812	1031951				LLCNB4931	MARKER LIGHT, ELECTRIC	8	EA
A003	FRC-B	O	813	1001986			6350	001051252	MIRROR, EMER 3IN	35	EA
A003	FRC-B	O	814	1046048	140	64249			PATIENT RESTRAINT STRAP (BLACK	4	EA
A003	FRC-B	O	815	1001985		14153	6260	010868077	PERSONNEL MARKER CHEMLIGHT	2	BX
A003	FRC-B	O	816	1046049	215	64249			PERSONNEL RETRIEVAL STRAP	1	EA
A003	FRC-B	O	818	1046102			8315	009264930	PILE FASTENER TAPE (VELCRO PIL	3	YD
A003	FRC-B	O	819	1046050	217CG SZ LARGE	64249			SURVIVAL VEST W/CG MRKNGS (LAR	6	EA
A003	FRC-B	O	820	1046051	217CG SZ REG	64249			SURVIVAL VEST W/CG MRKNG (MED)	6	EA
A013	FRC-B	G	821	1046104			9390	010788661	TAPE REFLECTIVE 2" X 1800"	1	RO
A013	FRC-B	G	822	1032398			9390	010828927	TAPE, REFLECTIVE 1" X 1800"	2	RO
A003	FRC-B	O	823	1044980	320-CG SZ LARGE	64249			TYPE III FLOTATION VEST (LARGE	18	EA
A003	FRC-B	O	824	1046057	320-CG SZ MED	64249			TYPE III FLOTATION VEST (MEDIU	8	EA
A003	FRC-B	O	825	1046058	320-CG SZ SMALL	64249			TYPE III FLOTATION VEST (SMALL	4	EA
A013	FRC-B	G	826	1031931			9160	002852044	WAX, PARAFIN	1	LB
A003	FRC-B	O	827	1032013			1005	007162132	BRUSH, 38 CAL	2	PG
A003	FRC-B	O	828	1031948			1005	007660915	BRUSH, CLEANING, SMAL 1/2 "	2	EA
A003	FRC-B	O	829	1031946			1005	007162702	BRUSH, CLEANING, SMAL 500D	2	EA
A003	FRC-B	O	830	1032401			5140	003139487	CASE, CARRYING , GAGE BARREL W	1	EA
A003	FRC-B	O	831	1032016			8105	009215821	CASE, ORDNANCE WEAPONS SPARE P	2	EA
A003	FRC-B	O	834	1032000			1095	010790141	LAUNCHER, RIFLE LINE	1	EA
A003	FRC-B	O	835	1032473			1095	010790249	PROJECTILE, LINE THR	6	EA
A003	FRC-B	O	836	1031949			4933	005564255	REFLECTOR, GUN BARRE 50 CAL	2	EA
A003	FRC-B	O	837	1031670			1005	005564102	ROD, CLEANING, SMALL	2	EA
A003	FRC-B	O	838	1032010			1005	006301446	ROD, CLEANING, SMALL ARMS 12 G	1	EA
A003	FRC-B	O	840	1031833			5140	006507328	ROLL, TOOLS AND ACCE	2	EA
A003	FRC-B	O	841	1031961			1005	2883565	SWAB 50 CAL	2	PG
A013	FRC-B	O	842	1055933	1600-ORG-NAV	1CU83	4220	014851135	FPD NAVY TYPE	26	EA
A003	FRC-B	O	843	1067676	AM824	48849			OXYGEN AIRWAY	1	SE
A013	FRC-B	O	845	1067678	CANON B45	X0039			FACSIMILE MACHINE	1	EA
A003	FRC-B	O	846	1058501	546	64249			FINS, ROCKET	2	EA
A003	FRC-B	O	847	1001963	105	49268			SLIDE RULE, NAUTICAL	1	EA
A013	FRC-B	O	848	1068543	52P71	0Z581	4240	013009417	RESPIRATOR, AIR FILTERING	3	BX
A013	FRC-B	O	849	1036012	010155190	6H438	7210	010155190	PILLOW,BED	28	EA
A013	FRC-B	O	850	1070261	7210000825668	07779	7210	000825668	BLANKET, BED	30	EA
A013	FRC-B	R	63	1058404	10035644				CYLINDER H45 CARBON FIBER	16	EA
A013	FRC-B	R	42	1058383	MDL-12	X2189			BAG LOCKER (SCBA) 45/45 NAVSEA	8	EA
A013	FRC-B	R	851	10050751					FireHawk SCBA, USCG Custom 4500 Mask-Mounted Regulator Self Contained Breathing Apparatus consisting of · First Stage Regulator · Second Stage Regulator · Air Cylinder and Valve · Quick-Fill Universal Rescue Connection (URC) Assembly · Carrier and Harness · Facepiece with ClearCommand Communication System · NightFighter System/Pressure Gauge/Quick-Fill, Hard plastic case, 45min cylinder	10	EA
A013	FRC-B	O	852				4240	015122267	SCBA SPARE PARTS KIT	1	EA
A003	FRC-B	G	853				6810	002709989	TALC, TECHNICAL	1	LB
A003	FRC-B	O	854				4030	005423181	SHACKLE-ACHR SCR PIN 5-8 IN	2	EA
A003	FRC-B	O	855				1005	006507302	ROLL ORDNANCE	2	EA
A013	FRC-B	R	856				6668	010107959	TUBE GAS DETECTOR, HYDROCHLORIC ACID	2	SE
A013	FRC-B	R	857				6665	007690959	TUBE GAS DETECTOR, HYDROCYANIC ACID	2	SE
A013	FRC-B	O	858				6505	010171625	ACETAMINOPHEN	6	BT

Version	Hull	Outfit/ GUCL/ Repair Lkr/ CBR	ReqItem	CatNum	PartNum	CageNum	FSC	NIIN	Description	ReqQty	Unit
A013	FRC-B	G	859				7110	012038814	BINDER LOOSE LEAF PLASTIC WHITE 3 RING 2'	6	EA
A003	FRC-B	O	860				5120	002872504	SCREWDRIVER FLAT TIP 3" .144	1	EA
A003	FRC-B	O	861				5210	003172502	GAGE, BREECH BORE	1	EA
A003	FRC-B	O	862				5110	002890010	REAMER SET 0-10	1	SE
A003	FRC-B	G	863				3439	001848953	SOLDER, LEAD TIN ALLOY	1	SL
A013	FRC-B	G	864				5975	004515001	STRAP TIE DOWN 3-1/2" MAX BUNDLE DIA	1	HD
A013	FRC-B	G	865				5975	000742072	STRAP TIE DOWN 1-3/4" MAX BUNDLE DIA	1	HD
A013	FRC-B	G	866				5975	001563253	STRAP TIE DOWN 4" MAX BUNDLE DIA	1	HD
A003	FRC-B	G	867		FD-15-1000-04		4820	012988416	LUBE OIL SAMPLING FITTING	4	EA
A003	FRC-B	O	868				5220	005351217	GAGE, HEADSPACE	2	EA
A003	FRC-B	G	869				4020	002402154	CORD, NYLON (TYPE 1)	1	SP
A003	FRC-B	O	870				5120	002628491	WRENCH STRAP 1"-5"	1	EA
A003	FRC-B	O	871		610-CG LARGE				RAINTEC RAIN SUITS	12	EA
A003	FRC-B	O	872		610-CG MEDIUM				RAINTEC RAIN SUITS	8	EA
A003	FRC-B	O	873		610-CG SMALL				RAINTEC RAIN SUITS	2	EA
A003	FRC-B	O	874		610-CG X-LARGE				RAINTEC RAIN SUITS	4	EA
A003	FRC-B	O	875		03181				HYDROTEST ADAPTER	1	EA
A003	FRC-B	O	876		02141				PRESSURIZING ADAPTER	1	EA
A013	FRC-B	R	877		MINE SAFETY APPLIANCES PART # 10025932				ORION MULTIGAS DETECTOR	2	KT
A003	FRC-B	O	878		BP183				TRAUMA PAK	10	EA
A003	FRC-B	O	879		DSC-H5				DIGITAL CAMERA	1	Eea
A003	FRC-B	O	880		EMP3250GC				L.A. RESCUE O2 TO GO PRO TRAUMA KIT	1	KT
A003	FRC-B	O	881		DC983KA				14.4V 1/2" XRP DRILL/DRIVER KIT	1	KT
A003	FRC-B	O	882		170G				PNEUMATIC RATCHET WRENCH 3/8" DRIVE	1	EA
A003	FRC-B	O	883				8470	14798482	FLAK VEST	22	EA
A003	FRC-B	O	884					9353133	YELLOW SAFETY HELMETS	4	EA
A003	FRC-B	O	885					9353134	RED SAFETY HELMET	1	EA
A013	FRC-B	O	886						3% AFFF 5 GAL	20	EA
A003	FRC-B	O	887						AFFF PICK UP TUBES	1	EA
A013	FRC-B	Ø	888				4320	2170938	PERI-JET-EDUCTOR	4	EA
A003	FRC-B	O	889						SPANNER WRENCH	10	EA
A013	FRC-B	O	890				6230	7012947	DROP LIGHT EXPLOSION PROOF	3	EA
A013	FRC-B	R	891		#2 OR BETTER ROUGH CUT FIR OR PINE				WOOD SHORING 4 x 4 x 8	10	EA
A009	FRC-B	O	892						Reserved		
A013	FRC-B	O	893						USCG SPECIAL MATTRESS, 6" FOAM MATTRESS (3" OF 4LBS. MEMORY FOAM AND 3" OF HIGH PERFORMANCE POLYURETHANE BASE) WITH REMOVABLE TENCEL COVER WITH FIRE BARRIER, MATTRESS SIZE 28"W x 74"L x 6"H. RECOMMENDED SOURCE OF SUPPLY: FOAM SOURCE, BOULDER, CO, 800-255-0181	24	EA
A009	FRC-B	O	894						Reserved		
A003	FRC-B	O	895		# 1215				JIM BUOY 15 PERSON	1	EA
A003	FRC-B	O	896		0000LLCAN8400				HANDHELD SPOTLIGHT	2	EA
A013	FRC-B	O	897		274892-3				NVG AN/PVS-14 F6015UG2, COAST GUARD	3	EA
A013	FRC-B	O	898		TI-PLUS				HAND-HELD THERMOMETER HYGROMETER WITH	1	EA
A013	FRC-B	Ø	899		580H				WET-BULB/DRY-BULB-SHELTER	4	EA
A003	FRC-B	G	900				4220	3720585	CO2 CARTRIDGE FOR PFD	30	EA
A003	FRC-B	O	901				4220	2000538	PFD INFLATABLES TYPE III	22	EA
A003	FRC-B	O	902						COVER MK38 MOD 2	1	EA
A003	FRC-B	O	903						COVER .50 CAL	2	EA
A003	FRC-B	O	904						P-100 COVERS	2	EA
A003	FRC-B	O	905						P-6 COVERS	2	EA
A003	FRC-B	O	906						CAPSTAN/WINCH COVER	1	EA
A003	FRC-B	O	907						SHAFT LOCKS	2	EA
A003	FRC-B	O	908						JACOBS LADDER	4	EA
A003	FRC-B	O	909						STOKES LITTER	1	EA
A003	FRC-B	O	910						INFLATABLE FENDERS	4	EA
A003	FRC-B	O	911						TEAR DROP INFLATABLE FENDERS	5	EA
A003	FRC-B	G	912		PC451TY1CL1GR80		5350	001925047	ABRASIVE CLOTH	1	PG
A003	FRC-B	G	913		O-A-51		6810	002232739	ACETONE, TECHNICAL	1	PT
A003	FRC-B	G	914		HB-643 TYPE2		7920	005142417	BRUSH, ACID SWABBING	1	GR
A003	FRC-B	G	915		MIL-B-43363		7920	002050565	BRUSH, LENS 1" BRISTLE	1	EA
A003	FRC-B	G	916		71966		7920	011274376	BRUSH, WIRE, SCRATCH	1	EA

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A003	FRC-B	G	917		CCCC46		7920	002929204	CLOTH,LINT FREE		1 MX
A003	FRC-B	O	918		544972		0099	LLH7C0842	GOGGLES		1 PR
A003	FRC-B	G	919		MC1210-6ZX14		9150	014702386	GREASE, ORD EXT PR		1 CA
A003	FRC-B	G	920		MC1210-35PLX		9150	014702396	GREASE, ORD EXT PR		1 CN
A003	FRC-B	G	921		6205090		9150	009652408	GREASE,GROUND GLASS		1 TU
A003	FRC-B	O	922		MIL-H-45193		4940	007851162	HEATER, GUN TYPE		1 EA
A003	FRC-B	O	923		GGG-K-275		5120	005959244	KEY SET,SOCKET HEAD		1 SE
A003	FRC-B	G	924		7920000NIB0396		0099	LLH7C0844	LENS CLOTH		1 PG
A003	FRC-B	O	925		M3859/1-14		4930	002532478	LUBRICATING GUN		1 EA
A003	FRC-B	G	926		TW-25BCA16EP		9150	014482298	LUBRICATING OIL, WEA		1 CN
A003	FRC-B	G	927		TW-25B1JSL16		9150	014390858	LUBRICATING OIL,WPN		1 JR
A003	FRC-B	O	928		86015		0099	LLH7C0840	PAIL		1 EA
A003	FRC-B	O	929		RR-B-35		7240	002743875	PAIL-3 GALLON		1 DZ
A003	FRC-B	G	930		NNN-P-40		6640	004365000	PAPER,LENS		1 PG
A003	FRC-B	G	931		VV-P216		9150	002617899	PENETRATING OIL		1 PT
A003	FRC-B	O	932		A-T-508		5120	006248065	PLIERS,SLIP JOINT		1 EA
A003	FRC-B	G	933		A-A-2522		7920	001489666	RAG,WIPING		1 BE
A003	FRC-B	O	934		GGGSTY2CL6		5110	002550420	SCISSORS,ELECTRICIA		1 EA
A013	FRC-B	G	935		MILS8660		6850	008807616	SILICONE COMPOUND		10 TU
A003	FRC-B	G	936		ARMOR ALL		0099	LLH7C0841	SILICONE SPRAY		1 PT
A003	FRC-B	G	937		7385T14		0099	LLH7C0845	SOAP, IVORY		1 PG
A003	FRC-B	G	938		L-S-00626		7920	006339915	SPONGE		1 EA
A003	FRC-B	G	939		MIL46852		5970	009494846	TAPE,INSULATION,ELE		1 RO
A003	FRC-B	G	940		TG-1		8030	014504009	TEF-GEL 1OZ. SYRINGE		1 OZ
A003	FRC-B	O	941		GGGW636TY3		5120	001487917	WRENCH SET,COMBINAT		1 SE
A003	FRC-B	O	942		GGGW641		5120	000812307	WRENCH SET,SOCKET		1 SE
A003	FRC-B	O	943		945883000		0099	LLH7C0839	WRENCH, 14 MM COMB		1 EA
A003	FRC-B	O	944		GGGW631TY1CL1SIZE6		5120	002643795	WRENCH,ADJUSTABLE		1 EA
A003	FRC-B	O	945		GSA 05045117		0099	LLH7C0843	17PC MINI RACHET SE		1 EA
A003	FRC-B	O	946		12524144		4920	012530778	ADAPTER ASSEMBLY,BO		1 EA
A003	FRC-B	G	947		MMM-A-121		8040	002738717	ADHESIVE, RUBBER		1 PT
A003	FRC-B	G	948		MIL-T-22361		8030	002921102	ANTISEIZE COMPOUND		1 TU
A003	FRC-B	G	949		HB643		7920	005142417	BRUSH,ACID SWABBING		1 GR
A003	FRC-B	G	950		12524013		1005	011212390	BRUSH,CLEANING,SMAL		1 EA
A003	FRC-B	G	951		12524014		1005	011212391	BRUSH,CLEANING,SMAL		1 EA
A003	FRC-B	G	952		MILB43871		7920	002052401	BRUSH,CLEANING,TOOL		1 EA
A003	FRC-B	O	953		12524032		6150	011532796	CABLE ASSEMBLY,SPEC		1 EA
A003	FRC-B	O	954		12524021		1005	011197254	CLAMP ASSEMBLY,RECO		1 AY
A003	FRC-B	G	955		MIL-L-63460		9150	010546453	CLEANER,LUBRICANT A		1 PT
A003	FRC-B	O	956		12524015		5340	011197269	CRANK,HAND		1 EA
A003	FRC-B	O	957		FC0M-22 12524176		5120	010747558	CROWFOOT ATMT (22MM)		1 EA
A003	FRC-B	O	958		12524176		5120	012786889	CROWFOOT ATMT (32MM)		1 EA
A003	FRC-B	O	959		AN8506-17		5120	001848411	CROWFOOT WRENCH1-7/16		1 EA
A003	FRC-B	O	960		GGGW641		5120	002431689	EXTENSION,SOCKET WR		1 EA
A003	FRC-B	O	961		1227-6		5120	007236833	EXTRACTOR,SCREW THR		1 EA
A003	FRC-B	O	962		GGGH33TY1CL3TYD4ATOUGH		5120	002932999	FACE,HAMMER,INSETE		1 EA
A003	FRC-B	O	963		GGGH33TY1CL3STYD4AMED		5120	002933003	FACE,HAMMER,INSETE		1 EA
A003	FRC-B	O	964		12535035		5210	013294860	GAGE,CANNON BORE ER		1 EA
A003	FRC-B	O	965		GGGG17		5210	001319005	GAGE,THICKNESS		1 EA
A003	FRC-B	G	966		ZZ-G-381		8415	002668675	GLOVES,CHEMICAL PRO		1 PR
A003	FRC-B	O	967		5449T2		4240	011699070	GOGGLES,INDUSTRIAL		1 PR
A003	FRC-B	O	968		9GT38292		5120	013989333	HAMMER,HAND		1 EA
A003	FRC-B	O	969		GGGH86		5120	000618543	HAND HAMMER		1 EA
A003	FRC-B	O	970		12524476		1005	011200447	HANDLE ASSEMBLY		1 AY
A003	FRC-B	O	971		GGGH33TY1CL3STYD		5120	009038546	HOLDER,INSERTED HAM		1 EA
A003	FRC-B	O	972		7751-10		5120	011140941	INSERTER,SCREW THRE		1 EA
A003	FRC-B	O	973		7751-6		5120	011140943	INSERTER,SCREW THRE		1 EA
A003	FRC-B	G	974		FED SPEC 11-1-735		6810	009838551	ISOPROPYL ALCOHOL		1 QT
A003	FRC-B	O	975		GGGW655B-1		5120	001129599	KEY SET,SOCKET HEAD		1 SE
A003	FRC-B	O	976		MILK818		5110	001622205	KNIFE,POCKET		1 EA
A003	FRC-B	O	977		MILM11199		8415	010920039	MITTEN,HEAT PROTECT		4 EA
A003	FRC-B	O	978		12561306-4		5315	001942455	PIN,LOCK		1 HD
A003	FRC-B	O	979		GGGP471TYIICL1STYA		5120	002475177	PLIERS		1 EA

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A003	FRC-B	O	980		GGGP471TY5CL1		5120	002562150	PLIERS	1	EA
A003	FRC-B	O	981		GGGW340SZ9IN		5120	003052306	PLIERS, TWISTER	1	EA
A003	FRC-B	O	982		GGGP468TY1CL1		5110	002398253	PLIERS,DIAGONAL CUT	1	EA
A003	FRC-B	O	983		GGGP480TY3CL2		5120	000890874	PLIERS,RETAINING RI	1	EA
A003	FRC-B	O	984		GGG-P-831 TY8CLAST1SZ7		5120	002406083	PUNCH,DRIVE PIN	1	EA
A003	FRC-B	O	985		GGG-P-831 TY8CLAST1SZ2		5120	002423435	PUNCH,DRIVE PIN	1	EA
A003	FRC-B	G	986		DDDR30		7920	002051711	RAG,WIPING	1	BE
A003	FRC-B	O	987		12524481		1005	011197866	ROD SECTION,CLEANIN	1	EA
A003	FRC-B	O	988		12524482		1005	011197867	ROD SECTION,CLEANIN	2	EA
A003	FRC-B	O	989		GGGR791TY4CL2-6-1/4		5210	003625100	RULE,MACHINIST'S	1	EA
A003	FRC-B	O	990		FAML5		5120	010818058	SCREWDRIVER ATTACHM	1	EA
A003	FRC-B	O	991		4990-6M		5120	011021670	SCREWDRIVER ATTACHM	1	EA
A003	FRC-B	O	992		GGGS121TY1CL8STY1		5120	002277377	SCREWDRIVER,FLAT TI	1	EA
A003	FRC-B	O	993		GGGS121TY1CL5STY1		5120	002933309	SCREWDRIVER,FLAT TI	1	EA
A003	FRC-B	O	994		GGGS121TY1CL1STY2		5120	002277356	SCREWDRIVER,FLAT 3/16	1	EA
A003	FRC-B	O	995		GGG-W-641 TY2CL4		5120	009357309	SOCKET SET, SOCKET W	1	SE
A003	FRC-B	O	996		9GT44302		5120	010246150	SOCKET-10MM	1	EA
A003	FRC-B	G	997		SN60WRMAP2		3439	004995740	SOLDER,TIN ALLOY	1	LB
A003	FRC-B	O	998		4693-6		1005	011576471	TAP,FINISHING	1	EA
A003	FRC-B	O	999		4693-8		5136	011576470	TAP,THREAD CUTTING	1	EA
A003	FRC-B	G	1000		TG-1		8030	014504009	TEF-GEL 1OZ. SYRINGE	1	OZ
A003	FRC-B	O	1001		GGGT558/4		5140	008161791	TOOL BOX,PORTABLE	1	EA
A003	FRC-B	O	1002		4342-8		5120	011576467	TOOL,TANG BREAKOFF	1	EA
A003	FRC-B	O	1003		4342-6		5120	011576468	TOOL,TANG BREAKOFF	1	EA
A003	FRC-B	O	1004		4342-10		5120	011576469	TOOL,TANG BREAKOFF	1	EA
A003	FRC-B	G	1005		MS20995-C32		9505	002934208	WIRE,NONELECTRICAL	1	LB
A003	FRC-B	O	1006		5985159		5120	012830316	WRENCH-BOX X OE	1	EA
A003	FRC-B	O	1007		9GT42914		5120	011137134	WRENCH-BOX X OE 10MM	1	EA
A003	FRC-B	O	1008		9GT42917		5120	010547131	WRENCH-BOX X OE 13MM	1	EA
A003	FRC-B	O	1009		9GT42936		5120	011136295	WRENCH-BOX X OE 32MM	1	EA
A003	FRC-B	O	1010		GGGW686TYPE2STYLEA		5120	006406364	WRENCH-TORQ 1/2DR	1	EA
A003	FRC-B	O	1011		GGGW686TY1CL1STYBSZ2		5120	009586906	WRENCH-TORQ-AUD SND	1	EA