ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF PAGES 5

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER: 04/27/2009	2. CONTRACT NO. *(If any)*: HSCG23-06-D-ARB001
3. ORDER NO.: HSCG23-09-J-ARP178	4. REQUISITION/REFERENCE NO.: 2409239ARP178

5. ISSUING OFFICE *(Address correspondence to)*
ADMINISTRATIVE CONTRACTING OFFICE
1600 ELY STREET, MARINETTE, WI 54143

7a. NAME OF CONTRACTOR
Marinette Marine Corporation

b. COMPANY NAME

c. STREET ADDRESS
1600 Ely Street

d. CITY	e. STATE	f. ZIP CODE
Marinette	WI	54143

6. SHIP TO:

a. NAME OF CONSIGNEE
RB-M PROJECT RESIDENT OFFICE

b. STREET ADDRESS
7848 SOUTH 202ND STREET

c. CITY	d. STATE	e. ZIP CODE
KENT	WA	98032

f. SHIP VIA

8. TYPE OF ORDER

[ ] a. PURCHASE
REF YOUR: _____
Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.

[X] b. DELIVERY -- Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA
2A3T 028000130408/72209/2696/DA2CON/DEF.TASK

10. REQUISITIONING OFFICE
USCG HEADQUARTERS CG-9

11. BUSINESS CLASSIFICATION *(Check appropriate box(es))*
☐ a. SMALL ☒ b. OTHER THAN SMALL ☐ c. DISADVANTAGED ☐ d. WOMEN-OWNED

12. F.O.B. POINT	14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE *(Date)*	16. DISCOUNT TERMS
Destination			See Basic Contract

13. PLACE OF

a. INSPECTION	b. ACCEPTANCE
Destination	Destination

17. SCHEDULE *(See reverse for Rejections)*

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	This Task Order, under IDIQ Contract HSCG23-06-D-ARB001, establishes a time period and Not-to-Exceed (NTE) value for Heating, Ventilation, and Air Conditioning (HVAC) Alternatives Technical Study and Installation of HVAC Prototype in accordance with the attached Scope of Work. Time and Materials CLIN 3007 Technical Service The NTE amount for this order is $250,000. After the establishment of final costs under this Task Order, a Modification will be issued to deobligate excess funds. Period of Performance begins 04/28/09 thru 05/26/09.	1			NOT-TO-EXCEED (NTE) $250,000	

	18. SHIPPING POINT	19. GROSS SHIPPING WEIGHT	20. INVOICE NO.	
SEE BILLING INSTRUCTIONS ON REVERSE	21. MAIL INVOICE TO: a. NAME			17(h) *(Cont. pages)*
	b. STREET ADDRESS *(or P.O. Box)* See Basic Contract			17(i) GRAND TOTAL
	c. CITY	d. STATE	e. ZIP CODE	NTE $250,000

22. UNITED STATES OF AMERICA BY *(Signature)* ▶ Gail S. Thomas
Digitally signed by Gail S. Thomas
Date: 2009.04.27 15:50:13 -05'00'

23. NAME *(Typed)*
GAIL S. THOMAS
CONTRACTING OFFICER

Scope of Work for Technical Services under CLIN 3007 Task Order

HSCG23-09-J-ARP178

Heating, Ventilation, Air Conditioning (HVAC)

Alternatives Technical Study & Installation of Prototype

1.0 Background:

1.1 The current configuration of the RB-M HVAC system does not meet the performance requirements included at Specification Section 510-1.1. In an effort to resolve this non-conformance, the Contractor has revised the 514-002 HVAC System Calculations, Revision C, provided under CDRL 085-004. In this revision, several modifications to the calculations were made indicating that the heat load exceeds the cooling capacity of the current design.

1.2 The Contractor has proposed a corrective strategy consisting of actions to reduce the heat load, and provide more cooling capacity through the addition of a third 12K BTU/hr stand alone unit to achieve a total cooling capacity of 44K BTU/hr.

1.3 The Government requests that the Contractor perform engineering design services to evaluate additional alternatives to the currently proposed strategy to modify the RB-M HVAC System. The purpose of this study is only to evaluate the alternative systems and equipment and does not cover any effort associated with identifying and implementing any necessary heat load mitigation strategies presented during previous technical discussions that are necessary to meet Specification Section 510-1.1 requirements.

1.4 The study shall focus on identifying viable alternatives that use a refrigerant that has not been identified by the EPA for increased regulatory restrictions or will be phased out of production in the next 5 years.

1.5 The Government and MMC shall work to identify an alternative that can be prototyped on an RB-M.

1.6 Once an alternative has been identified, it will be prototyped on RB-M Hull 45611. The effort related to installation of the prototype under this task order only covers the additional incremental cost over and above that necessary to install the alternative prototype solution over the contractor's proposed solution, which consists of the three stand alone units, and all heat mitigation efforts that have been already identified by MMC as necessary.

1.7 The Contractor shall also not charge the Government for 45611 production delays not associated with this task order. As of 03 April 2009, RB-M 45611 was approximately 2 weeks behind schedule according to the Government's assessment of the Integrated Master Schedule.

1.8 Operational Testing and Evaluation (OT&E) has also revealed that the two 1.5kW space heaters in the Survivors Compartment and the Pilothouse are

not being used. The Government is interested in moving this heating capacity from these manned locations to provide equivalent 3kW of heat capacity to the Lazarette to prevent icing of strainers while in-port. Prior to installation, please verify 3kW estimated capacity and provide recommendation.

1.9 For any vendor support the Contractor intends to obtain as a material cost estimated to exceed $500 under this order, aside from prototype materials, the Contractor shall obtain Contracting Officer's approval in advance of the purchase.

2.0 Requirements: The Contractor shall investigate alternative solutions that are defined by the Government through technical discussion.

2.1 Technical Comparison: The following design details may be generated for each alternative solution as agreed by the Government and Contractor as efforts are made to identify an optimal solution for the HVAC system non-conformance.

2.1.1 Schematic/Block Diagram: Electrical/mechanical block diagrams or schematics shall be developed to accurately define electrical circuits, refrigerant lines, cooling water, heating, ventilation, and condensate drainage components of each design option. These schematics will be used to understand the discreet components of the system and their impact on the RB-M systems.

2.1.1.1 All electrical details are to be on separate sheets and separate from mechanical details. All electrical components shall be identified in the same schematic view.

2.1.1.2 All mechanical, refrigerant, cooling water, and condensate lines shall be depicted in the same schematic view.

2.1.1.3 All components that have a functional effect on the system shall be depicted.

2.1.1.4 The size and capacities of all electrical and mechanical components shall be identified.

2.1.2 General Outfit Configuration: Provide 3D model depictions of alternatives in the proposed design locations. Identify all potential interferences to installation and for maintenance.

2.1.3 Weight Analysis: Perform a summary analysis to understand the potential impacts of each scenario on the weight performance parameters of the RB-M. This analysis shall identify the weights of components that will be added, removed, or modified from the current RB-M configuration. Both options 1(a) and 1(b) shall be compared to the current installation and include:

2.1.3.1 The weight of all equipment, piping, and entrained water & refrigerant with approximate LCG location (+/- 3 inches). Estimated values (+/- 5 lbs) can be used whenever lengths of hose or of pipe are uncertain.

2.1.4 Electrical Analysis: Electrical loading scenarios shall be analyzed to compare the current RB-M electrical loading/reserve A/C capacity to the electrical loading of each design option in the following states:

2.1.4.1 RB-M amperage and power requirements in heating mode.

2.1.4.2 RB-M amperage and power requirements in cooling mode

2.1.4.3 Maximum amperage draw shall be investigated to ensure A/C power is not impacted during start up of equipment. Both the normal operating and "worst case" electrical loading shall be compared

2.1.5 Heating Load Analysis: An analysis of each design option shall be provided to compare the heat generation capacity of the RB-M while inport in the worst case scenario of being tied up at dockside. Heat capacity shall be compared directly between the two design options and the current heating capacity of the RB-M.

2.2 Summary Technical Feasibility and Effort**:** The Contractor shall provide a summary of each design option in regards to:

2.2.1 Production Effort Feasibility – Comparison of the technical feasibility of production with examples and justification by using specific examples of typical installation details associated with each design.

2.2.2 Retrofit Summary – Itemized summary of actions necessary to retrofit each item.

2.3 Installation of the HVAC Prototype: The Contractor shall install the HVAC alternative identified through the study.

2.3.1 The prototype shall be installed in accordance with all relevant requirements of the RB-M Production Contract, HSCG23-06-D-ARB001.

2.3.2 The prototype shall be installed on RB-M 45611 currently in production at the Aluminum Center of Excellence (ACE) in Green Bay, WI.

2.4 The design study shall be accomplished within four weeks of the receipt of this delivery order.

2.5 The Prototype shall be installed on 45611 prior to delivery of this RB-M to the USCG. Please advise the Government of delays to the IMS within 10 days of receipt of this task order.

3.0 The Government and Contractor will engage in a technical discussion within one week of the delivery of the study to discuss the findings of the study.