

Marine Department Shipbuilding Tender No. 4/2019

Tender Addendum No. 1

Tender Reference : Marine Department Shipbuilding Tender No. 4/2019
Procuring Department : Marine Department
Subject : Supply of One (1) Fireboat for the Fire Services Department
within 26 months after the Contract Date

Amendments as follows:

1. Paragraph 2.4.1 of Part VII – Technical Specifications

2.4.1 The Operational Hours / Range shall meet the following requirements: [E]
Number of days the Vessel will be used in a year: Unrestricted
Number of hours cruise running in normal daily operations: 850 hours/year
Number of hours running non-stop at maximum speed: 150 hours/year
Endurance range required: 8 hours at 25 knots

Should read as

2.4.1 The Operational Hours / Range shall meet the following requirements: [E]
Number of days the Vessel will be used in a year: Unrestricted
Number of hours cruise running in normal daily operations: 850 hours/year
Number of hours running non-stop at maximum speed: 150 hours/year
Endurance range required: 3 x 8 hours at 25 knots

2. Paragraph 5.11.3 of Part VII – Technical Specifications

5.11.3 Three (3) fixed remote foam/water monitors shall be controlled remotely at the EFCP located in the wheelhouse.

Should read as

5.11.3 **Four (4)** fixed remote foam/water monitors shall be controlled remotely at the EFCP located in the wheelhouse.

3. Paragraph 5.11.3 of Part VII – Technical Specifications

5.14.1 Three (3) Foam/Water monitors shall be located so as to allow for an unobstructed range of operation. Means shall be provided to prevent monitor jets from impinging on Vessel structures and equipment.

Should read as

5.11.3 **Four (4)** Foam/Water monitors shall be located so as to allow for an unobstructed range of operation. Means shall be provided to prevent monitor jets from impinging on Vessel structures and equipment.

1. Paragraph 2.4.1 of Part VII – Technical Specifications

Tender Ref.: Marine Department Shipbuilding Tender No. 4/2019

- (f) Lloyd's Register of Shipping LR
 - (g) Nippon Kaiji Kyokai NK
 - (h) Registro Italiano Navale RINA
 - (i) Russian Maritime Register of Shipping RS
- and other entities as specified below:
- (j) International Electro-technical Commission (IEC) Regulations for the Electrical and Electronic Equipment.
 - (k) International Telecommunications Union recommendations in the International Radio Regulations (ITU-R).
 - (l) Quality and standards of the welding shall comply with the rules of an RO or American Welding Society (AWS) or other applicable international standards or rules acceptable by MD.
 - (m) International Regulations for Preventing Collisions at Sea 1972, as amended by International Maritime Organisation (IMO) Resolution A464(XII) of the Intergovernmental Maritime Consultative Organization and Resolutions A.626(15), A.678(16), A.736(18), A.910(22), A.1004(25) and A.1085(28) of the International Maritime Organization, except Rules 39, 40 and 41.
 - (n) All equipment/fittings shall be designed and manufactured to at least the standards as specified in these Technical Specifications. When none of the rules and regulations in Paragraphs 2.3.4 (a) to (i) above are applicable, then the applicable standards specified by any of the applicable organisations below shall be complied with:
 - BSI British Standards Institute
 - GB Standardization Administration of the People's Republic of China
 - IEEE Institute of Electrical and Electronic Engineers
 - ISO International Organization for Standardization
 - JIS Japanese Industrial Standards

In the event of any inconsistency amongst the above requirements, rules and standards, those mentioned in sub-paragraphs (j) to (m) shall prevail over the requirements of the relevant RO as listed in sub-paragraphs (a) to (i) above.

2.4 Vessel Operating Profile and Environment

2.4.1 The Operational Hours / Range shall meet the following requirements: [E]

Number of days the Vessel will be used in a year:	Unrestricted
Number of hours cruise running in normal daily operations:	850 hours/year
Number of hours running non-stop at maximum speed:	150 hours/year
Endurance range required:	3x8 hours at 25 knots

2.4.2 Vessel's normal daily operating profile is:

- (a) 2 hours at maximum speed of 25 knots at 90% MCR;
- (b) 2 hours at cruising speed of 18 knots at 60-70% MCR;
- (c) 4 hours at idle conditions.

2.4.3 Number or persons to be carried on board

- (a) Carries 10 crew and 25 land crew for fire-fighting;
- (b) Crew weights shall be 100kg per person (including outfit) plus 20 kg of effects when calculating weights;

2. Paragraph 5.11.3 of Part VII – Technical Specifications

Tender Ref.: Marine Department Shipbuilding Tender No. 4/2019

- 5.9.4 Spray system pumping capacity shall be sufficient to ensure an adequate supply of pressure and water volume for operation of the water-spray system.
- 5.9.5 The water-spray system shall be well protected from corrosion. Suitable drainage arrangements shall be arranged on deck.
- 5.9.6 Extra deck scuppers and freeing ports (in addition to the Vessel's normally designed scupper and drainage system) shall be provided to provide efficient drainage of water from deck when the water-spray system is in operation.

5.10 External Fire-Fighting Control Panel (EFCP)

- 5.10.1 Remote control of the external fire-fighting system shall be centralised on an "External Fire-Fighting Control Console" located in the wheelhouse. The system shall be powered by 24 Volt DC.
- 5.10.2 The EFCP shall include the following:
 - (a) A miniature diagram of the whole fire-fighting system (from sea suction chest to fire monitor on deck with valve position indicator lamps for all the major valves including suction and discharge valves of all fire pumps, cross-over valve, isolating valves for fire monitors and outlets on deck, inlet valves for the pump inductors, foam tank outlet valve, all foam supply valves etc);
 - (b) Remote start stop of PTO fire pump, including clutch in or out operation;
 - (c) Remote start stop of diesel engine driven fire pump, including clutch in or out operation;
 - (d) Remote controls for each water/foam monitor;
 - (e) Fire main pressure gauges (one gauge for each of the two zones) minimum diameter 100 mm;
 - (f) Remote start-stop engine drive;
 - (g) AC electric current;
 - (h) Fault indicating alarms;
 - (i) Protective devices such as overspeed and others as recommended by the manufacturer.
 - (j) Foam line pressure/vacuum compound gauge;
 - (k) Foam tank content repeater;
 - (l) Lamp test button;
 - (m) Alarm mute push button; and
 - (n) Dimmer switch for control panel.

5.11 Foam Monitor System

- 5.11.1 The foam/water monitors shall be capable of a throw range of 110 m, with all foam/water monitors in simultaneous operation at maximum foam output. The foam concentration tanks shall have a minimum capacity for 30 minutes foam production at an assumed admixture of 1 percent.
- 5.11.2 The foam/water monitor system shall be of a fixed installation design with separate foam concentration tanks, foam mixing units and pipelines to the foam/water monitors. The water supply shall be pumped from independent sea water chests. Means to reduce supply water pressure shall be provided to assure correct water pressure for maximum foam generation.
- 5.11.3 ~~Three (3)~~ **Four (4)** fixed remote foam/water monitors shall be controlled remotely at the EFCP located in the wheelhouse.
- 5.11.4 The foam discharging system shall be designed for discharging foam solution (mixture of 1% Alcohol Resistant AFFF Concentrate (foam liquid) and 99% sea water via the external fire-fighting system within one minute after starting of fire pump.
- 5.11.5 Foam concentrate shall be supplied by the Contractor for testing and for the topping up all foam concentrate tanks to the operating level as part of the requirements of Technical Acceptance.

3. Paragraph 5.11.3 of Part VII – Technical Specifications

Tender Ref.: Marine Department Shipbuilding Tender No. 4/2019

- 5.13.2 A gauging device for determining remaining foam concentrate volume in the tank or a foam level indicator of an approved type with toughened glass and protection shall be provided. This shall be designed and installed to the satisfaction of the GNC of MD and FSD.

5.14 Foam/Water Monitor

- 5.14.1 ~~Three (3)~~ **Four (4)** Foam/Water monitors shall be located so as to allow for an unobstructed range of operation. Means shall be provided to prevent monitor jets from impinging on Vessel structures and equipment.
- 5.14.2 Monitor foundations and structural supports shall be designed for all modes of operation, with attention given to loadings at maximum output and water jet reactions. Calculations demonstrating adequacy of the design, including water jet reaction specified by the monitors' manufacturer, shall be submitted to the RO and the GNC before installation for consideration.
- 5.14.3 The remote monitors shall be remote-control from wheelhouse. The monitor remote-control station shall have adequate overall operational visibility, including that of the water trajectory elevation, means of communication and protection from heat and water spray.
- 5.14.4 Control systems shall be suitably protected from external damage. Electrical control systems shall be provided with overload and short circuit protection. Hydraulic or pneumatic monitor control systems shall be duplicated. Shut-off and control equipment shall be clearly marked. Foam/Water monitors shall be brass and stainless-steel construction suitable for operation at a maximum pressure of 10-15 bar and with following characteristics:

	Remote Monitors Remote on Wheelhouse Roof, Two (2) x Remote of Main Deck, One (1) on port side and One (1) on starboard side Forward.
Application	Alcohol Resistant AFFF Concentrate
Minimum Flow Rate	12,000 L/min at 10 Bar
Minimum Throw Range	> 110 metres at 10 Bar
Vertical Movement	-20° to +70 °
Rotation Angle	270 ° Continuous

- 5.14.5 A gate valve, pressure gauge and pedestal pipe base of suitable height shall be provided for each monitor.
- 5.14.6 The Contractor shall demonstrate the following to the satisfaction of Government at the Technical Acceptance:
- (a) Operating pressure of the foam proportioning system; and
 - (b) Flow rate of foam solution discharge available at each individual outlet equipped with a foam proportioning device.
- 5.14.7 All gauges, flow-meters, and indicators shall be located so they are readily visible. All gauges or flow-meters shall be mounted in a manner to protect the gauge from physical damage and from excessive vibration.

5.15 Nameplates and Instruction Plates

- 5.15.1 All labels and marking shall be in both English and in Traditional Chinese and be of a type permanent in nature, shall be capable of withstanding the effects of extreme weather and temperature, and shall be attached in a manner that requires mechanical means to remove.
- 5.15.2 A nameplate shall be provided for each control, gauge, and indicator that is clearly marked with the identification and function of that device.
- 5.15.3 An instruction plate shall be provided for the foam proportioning system that includes, as a minimum, a piping schematic of the system and basic operation instructions.

1. Paragraph 2.4.1 of Part VII – Technical Specifications

Tender Ref.: Marine Department Shipbuilding Tender No. 4/2019

- (f) Lloyd's Register of Shipping LR
 - (g) Nippon Kaiji Kyokai NK
 - (h) Registro Italiano Navale RINA
 - (i) Russian Maritime Register of Shipping RS
- and other entities as specified below:
- (j) International Electro-technical Commission (IEC) Regulations for the Electrical and Electronic Equipment.
 - (k) International Telecommunications Union recommendations in the International Radio Regulations (ITU-R).
 - (l) Quality and standards of the welding shall comply with the rules of an RO or American Welding Society (AWS) or other applicable international standards or rules acceptable by MD.
 - (m) International Regulations for Preventing Collisions at Sea 1972, as amended by International Maritime Organisation (IMO) Resolution A464(XII) of the Intergovernmental Maritime Consultative Organization and Resolutions A.626(15), A.678(16), A.736(18), A.910(22), A.1004(25) and A.1085(28) of the International Maritime Organization, except Rules 39, 40 and 41.
 - (n) All equipment/fittings shall be designed and manufactured to at least the standards as specified in these Technical Specifications. When none of the rules and regulations in Paragraphs 2.3.4 (a) to (i) above are applicable, then the applicable standards specified by any of the applicable organisations below shall be complied with:
 - BSI British Standards Institute
 - GB Standardization Administration of the People's Republic of China
 - IEEE Institute of Electrical and Electronic Engineers
 - ISO International Organization for Standardization
 - JIS Japanese Industrial Standards

In the event of any inconsistency amongst the above requirements, rules and standards, those mentioned in sub-paragraphs (j) to (m) shall prevail over the requirements of the relevant RO as listed in sub-paragraphs (a) to (i) above.

2.4 Vessel Operating Profile and Environment

2.4.1 The Operational Hours / Range shall meet the following requirements: [E]

Number of days the Vessel will be used in a year:	Unrestricted
Number of hours cruise running in normal daily operations:	850 hours/year
Number of hours running non-stop at maximum speed:	150 hours/year
Endurance range required:	3 x 8 hours at 25 knots

2.4.2 Vessel's normal daily operating profile is:

- (a) 2 hours at maximum speed of 25 knots at 90% MCR;
- (b) 2 hours at cruising speed of 18 knots at 60-70% MCR;
- (c) 4 hours at idle conditions.

2.4.3 Number or persons to be carried on board

- (a) Carries 10 crew and 25 land crew for fire-fighting;
- (b) Crew weights shall be 100kg per person (including outfit) plus 20 kg of effects when calculating weights;

2. Paragraph 5.11.3 of Part VII – Technical Specifications

- 5.9.4 Spray system pumping capacity shall be sufficient to ensure an adequate supply of pressure and water volume for operation of the water-spray system.
- 5.9.5 The water-spray system shall be well protected from corrosion. Suitable drainage arrangements shall be arranged on deck.
- 5.9.6 Extra deck scuppers and freeing ports (in addition to the Vessel's normally designed scupper and drainage system) shall be provided to provide efficient drainage of water from deck when the water-spray system is in operation.

5.10 External Fire-Fighting Control Panel (EFCP)

- 5.10.1 Remote control of the external fire-fighting system shall be centralised on an "External Fire-Fighting Control Console" located in the wheelhouse. The system shall be powered by 24 Volt DC.
- 5.10.2 The EFCP shall include the following:
 - (a) A miniature diagram of the whole fire-fighting system (from sea suction chest to fire monitor on deck with valve position indicator lamps for all the major valves including suction and discharge valves of all fire pumps, cross-over valve, isolating valves for fire monitors and outlets on deck, inlet valves for the pump inductors, foam tank outlet valve, all foam supply valves etc);
 - (b) Remote start stop of PTO fire pump, including clutch in or out operation;
 - (c) Remote start stop of diesel engine driven fire pump, including clutch in or out operation;
 - (d) Remote controls for each water/foam monitor;
 - (e) Fire main pressure gauges (one gauge for each of the two zones) minimum diameter 100 mm;
 - (f) Remote start-stop engine drive;
 - (g) AC electric current;
 - (h) Fault indicating alarms;
 - (i) Protective devices such as overspeed and others as recommended by the manufacturer.
 - (j) Foam line pressure/vacuum compound gauge;
 - (k) Foam tank content repeater;
 - (l) Lamp test button;
 - (m) Alarm mute push button; and
 - (n) Dimmer switch for control panel.

5.11 Foam Monitor System

- 5.11.1 The foam/water monitors shall be capable of a throw range of 110 m, with all foam/water monitors in simultaneous operation at maximum foam output. The foam concentration tanks shall have a minimum capacity for 30 minutes foam production at an assumed admixture of 1 percent.
- 5.11.2 The foam/water monitor system shall be of a fixed installation design with separate foam concentration tanks, foam mixing units and pipelines to the foam/water monitors. The water supply shall be pumped from independent sea water chests. Means to reduce supply water pressure shall be provided to assure correct water pressure for maximum foam generation.
- 5.11.3 Four (4) fixed remote foam/water monitors shall be controlled remotely at the EFCP located in the wheelhouse.
- 5.11.4 The foam discharging system shall be designed for discharging foam solution (mixture of 1% Alcohol Resistant AFFF Concentrate (foam liquid) and 99% sea water via the external fire-fighting system within one minute after starting of fire pump.
- 5.11.5 Foam concentrate shall be supplied by the Contractor for testing and for the topping up all foam concentrate tanks to the operating level as part of the requirements of Technical Acceptance.

3. Paragraph 5.11.3 of Part VII – Technical Specifications

Tender Ref.: Marine Department Shipbuilding Tender No. 4/2019

- 5.13.2 A gauging device for determining remaining foam concentrate volume in the tank or a foam level indicator of an approved type with toughened glass and protection shall be provided. This shall be designed and installed to the satisfaction of the GNC of MD and FSD.

5.14 Foam/Water Monitor

- 5.14.1 Four (4) Foam/Water monitors shall be located so as to allow for an unobstructed range of operation. Means shall be provided to prevent monitor jets from impinging on Vessel structures and equipment.
- 5.14.2 Monitor foundations and structural supports shall be designed for all modes of operation, with attention given to loadings at maximum output and water jet reactions. Calculations demonstrating adequacy of the design, including water jet reaction specified by the monitors' manufacturer, shall be submitted to the RO and the GNC before installation for consideration.
- 5.14.3 The remote monitors shall be remote-control from wheelhouse. The monitor remote-control station shall have adequate overall operational visibility, including that of the water trajectory elevation, means of communication and protection from heat and water spray.
- 5.14.4 Control systems shall be suitably protected from external damage. Electrical control systems shall be provided with overload and short circuit protection. Hydraulic or pneumatic monitor control systems shall be duplicated. Shut-off and control equipment shall be clearly marked. Foam/Water monitors shall be brass and stainless-steel construction suitable for operation at a maximum pressure of 10-15 bar and with following characteristics:

	Remote Monitors Remote on Wheelhouse Roof, Two (2) x Remote of Main Deck, One (1) on port side and One (1) on starboard side Forward.
Application	Alcohol Resistant AFFF Concentrate
Minimum Flow Rate	12,000 L/min at 10 Bar
Minimum Throw Range	> 110 metres at 10 Bar
Vertical Movement	-20° to +70 °
Rotation Angle	270 ° Continuous

- 5.14.5 A gate valve, pressure gauge and pedestal pipe base of suitable height shall be provided for each monitor.
- 5.14.6 The Contractor shall demonstrate the following to the satisfaction of Government at the Technical Acceptance:
- (a) Operating pressure of the foam proportioning system; and
 - (b) Flow rate of foam solution discharge available at each individual outlet equipped with a foam proportioning device.
- 5.14.7 All gauges, flow-meters, and indicators shall be located so they are readily visible. All gauges or flow-meters shall be mounted in a manner to protect the gauge from physical damage and from excessive vibration.

5.15 Nameplates and Instruction Plates

- 5.15.1 All labels and marking shall be in both English and in Traditional Chinese and be of a type permanent in nature, shall be capable of withstanding the effects of extreme weather and temperature, and shall be attached in a manner that requires mechanical means to remove.
- 5.15.2 A nameplate shall be provided for each control, gauge, and indicator that is clearly marked with the identification and function of that device.
- 5.15.3 An instruction plate shall be provided for the foam proportioning system that includes, as a minimum, a piping schematic of the system and basic operation instructions.