U.S. Department of Homeland Security

United States Coast Guard

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MAR 3 1 2015

ERMA FIRST ESK Engineering Solutions SA
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ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE - REVISION #1

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by ERMA FIRST ESK Engineering Solutions SA for the ERMA FIRST ballast water treatment system (BWTS). This letter, which is a revision to an AMS acceptance letter issued October 11, 2013, grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for 43 models of the ERMA FIRST BWTS, as type approved by the Ministry of Shipping, Maritime Affairs and the Aegean of the Hellenic Republic, and as detailed in type approval certificate 4245.9/01/15 issued January 15, 2015.

The following ERMA FIRST BWTS are accepted as AMS for use in U.S. waters:

- Models 50, 100, 200, 300, 400,500, 600, 700, 800, 900, 1000, 1100, 1200,1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, and 3000 with 200 micrometer (um) pre-filters and hydro-cyclonic separator units;

- Models FIT 100, FIT 200, FIT 300, FIT 400, FIT 600, FIT 800, FIT 1000, FIT 1200, FIT 1500, FIT 2000, FIT 2500, and FIT 3000 with 40 micrometer (um) Filtrex and Filtersafe mesh filter units.

The ERMA FIRST BWTS are assigned the following AMS identification number:

AMS-2013- ERMA FIRST BWTS-001

Coast Guard acceptance of the ERMA FIRST BWTS as an AMS does not accord or imply conformance to or compliance with any other Federal, state, or local water discharge effluent limitations that may apply to the vessel on which the AMS operates or the regulatory regimes and locations within which it operates. The owner and operator of the vessel must comply with all applicable laws, regulations, and treaties, including the Clean Water Act and associated provisions of the Vessel General Permit (VGP); the Federal Insecticide, Fungicide, and

Rodenticide Act of 1972, as amended (FIFRA); other Coast Guard safety regulations and requirements; and other applicable laws and regulations.

In accordance with 33 CFR 151.2026 (a)(5), the AMS application process required the submittal of a type approval application for the BWTS. The type approval information submitted with the AMS application does not have any bearing on the type approval status of the BWTS, nor does Coast Guard acceptance of the ERMA FIRST BWTS as an AMS indicate that the BWTS meets requirements for Coast Guard type approval.

The following conditions apply for the operation of the ERMA FIRST BWTS in U.S. waters:

1. The AMS manufacturer must comply with all general conditions of certification stipulated in the type approval certificate issued by the Ministry of Shipping, Maritime Affairs and the Aegean of the Hellenic Republic, as referenced above. Revocation of type approval by the approving authority will result in revocation of this AMS acceptance. Copies of all reports required under the stated conditions of use must be submitted to the Environmental Standards Division (OES-3) at the following address or email:

   COMMANDANT (CG-OES-3)
   United States Coast Guard Stop 7509
   2703 Martin Luther King Jr. Ave SE
   Washington DC 20593-7509
   e-mail: environmental_standards@uscg.mil

2. Installation and repairs of the AMS must be performed in accordance with the manufacturer's instructions and approved by the flag administration or its representative.

3. Operation and maintenance of the AMS must be conducted in accordance with all specifications and limiting conditions stipulated on the certificate of type approval and with the manufacturer's instructions, including any limitations posed by the environment (for example, water quality, temperature, salinity, or other parameters) or vessel operations (for example, voyage duration, pumping rates, or other constraints). The following specific conditions apply:

   a. **Flow rates:** The flow rate of ballast water through the AMS should not exceed the treatment rated capacity (TRC) for the installed ERMA FIRST BWTS system, as specified in the type approval certificate. Flow rate data is available via readouts from the system's control panel.

   b. **Differential pressure across the filter:** The ERMA FIRST BWTS models employ a 200 micrometer (um) screen mesh Krone KAF pre-filter upstream of the hydro-cyclonic separator unit. This pre-filter is preset to automatically back flush if the differential pressure across the filter reaches 0.11 bar. An alarm is sounded by the control system if high differential pressure is detected across this pre-filter. The

ERMA FIRST BWTS FIT models employ a 40 micrometer (um) mesh filter unit manufactured by either Filtersafe or Filtrex, as detailed in the type approval certificate. The Filtersafe filter is pre-set to automatically back-flush at 0.5 bar differential pressure across the filter. The Filtrex filter is pre-set to automatically back-flush at 0.3 bar differential pressure across the filter. The Filtrex filter will actuate an alarm at the control panel if differential pressure across the filter equals or exceeds 0.5 bar. Filter pressure data is available via readouts from the system's control panel.

c. **Design dose of oxidants:** As specified in the system's operations, maintenance, and safety manual (OMSM), the ERMA FIRST BWTS models equipped with hydro-cyclonic separation capability are designed to operate with a target dose of total residual oxidant (TRO) of 10 milligrams per liter (mg/L). This TRO value is measured as the concentration of free chlorine in the ballast water by a TRO analyzer located downstream of the electrolyzer unit(s). The ERMA FIRST BWTS FIT models equipped with 40 micrometer (um) filter units are designed to operate with a target dose of total residual oxidant (TRO) of 6 milligrams per liter (mg/L), measured as the concentration of free chlorine in the ballast water by a TRO analyzer located downstream of the electrolyzer unit(s). TRO (dosage) data is available via readouts from the system's control panel.

d. **Maximum allowable discharge concentration (MADC):** Prior to the discharge of treated ballast water, the oxidant residual must be measured to ensure compliance with all applicable federal, state, and local water quality effluent limits. The oxidant residual is measured by a TRO analyzer, which automatically controls the neutralizing unit to achieve the desired concentration of TRO in the discharged ballast water.

A historical record documenting that the system has been operated within these criteria, including a record of any alarm conditions, shall be made available for review onboard the vessel.

4. This BWTS has been efficacy tested in marine, brackish, and fresh waters. As specified in the type approval certificate for this system, it is approved for use in fresh, brackish, and marine waters with salinities equal to or greater than 0.9 practical salinity units (PSU). Therefore, it is accepted for use as an AMS in U.S. waters with salinities equal to or greater than 0.9 PSU. The salinity concentration of ballast water entering this BWTS can be determined by readouts from a salinity meter located on the ballast water intake side of this system. This AMS is limited to the treatment of ballast water with an ambient temperature of 3 degrees Centigrade or above. A temperature meter within the BWTS provides water temperature data to the system's control unit.

5. If installed on a U.S. flag vessel, it must be shown that the system and installation comply with or provide an equivalent level of safety to the requirements of 46 CFR Subchapter F (Marine Engineering) and Subchapter J (Electrical Engineering). All electrical

equipment located within hazardous areas must be explosion proof or intrinsically safe as certified by an independent laboratory recognized by USCG per 46 CFR 111.105-7.

6. Use of the AMS is specified in the ship's ballast water management plan (BW plan), required by 33 CFR 151.2050(g). The BW plan must identify: (1) the ballast water management practices to be used in the event the AMS cannot be used, and; (2) the personnel responsible for the operation, maintenance, and repair of the BWTS. An up-to-date record of the operation, maintenance, and repair of the BWTS must be maintained onboard the ship.

7. Any change in design, materials, manufacturing, or intended operational conditions of this BWTS without prior notification to, and acceptance by, the U. S. Coast Guard will automatically invalidate this AMS acceptance. Prior to any such change, the manufacturer of an AMS must notify the Commanding Officer, U. S. Coast Guard Marine Safety Center (MSC), at the following address or e-mail:

   Commanding Officer (MSC)
   Attn: Marine Safety Center
   U.S. Coast Guard Stop 7410
   4200 Wilson Blvd, Suite 400
   Arlington VA 20598-7410
   e-mail: msc@uscg.mil

   The notification must include: (1) a description of the change, the reason it is required, and its intended advantages; (2) an explanation of any effect of the change on installation, operation, maintenance, or repair requirements, and; (3) an indication of whether or not the original configuration of the BWTS will be discontinued.

8. If the installed AMS does not operate properly when treating ballast water intended for discharge in U.S. waters, the person directing the movement of the vessel must ensure that the problem is reported to the nearest Coast Guard Captain of the Port (COTP) or District Commander as soon as practicable. The Coast Guard shall be notified of any treatment system or component failures, irreparable damage to components of the AMS, frequent process upsets or out-of-bounds operating conditions, or other situations or process-related conditions that may reduce treatment effectiveness. The vessel may continue to the next U.S. port of call, subject to the directions of the COTP or District Commander, as provided by 33 CFR 160.

9. All transport and handling of chemicals required for proper operation of the AMS must be conducted in accordance with 46 CFR 147 (Hazardous Ships' Stores), 49 CFR 171-180 (Hazardous Materials Regulations), and 46 CFR 98.30 (portable tanks), as appropriate.

10. Use of the AMS must be reported in the ship's ballast water management reports submitted to the National Ballast Information Clearinghouse, as required by 33 CFR

151.2060, as follows:

a. In Section 4, report the number of tanks treated by the AMS in the space labeled "Underwent Alternative Management";

b. In Section 4, write the AMS identification number (AMS-2013-ERMA FIRST BWTS-001) in the space labeled "Please specify alternative method(s) used, if any", and;

c. In Section 5, in the middle section titled "BW MANAGEMENT PRACTICES" identify the management method as "ALT" under the heading "Method (ER/FT/ALT)" for each tank for which the AMS was used.

The Coast Guard may suspend, withdraw or terminate the acceptance of this BWTS as an AMS in accordance with 46 CFR 2.75-40, 2.75-50(a) and 2.75-50(b), respectively.

A copy of this letter shall be provided to each vessel with this installed AMS and shall be available for review when the vessel is operating in U.S. waters.

I thank you for your dedicated efforts to seek out AMS acceptance, and we look forward to working with you throughout the type approval process. If you have any questions concerning this letter, you may contact Mr. John Meehan of my staff at John.A.Meehan@uscg.mil.

Sincerely,

R. E. Bailey

R. E. BAILEY
Captain, U.S. Coast Guard
Office of Operating and Environmental Standards
By direction