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October 10, 2014

Kuraray Co., Ltd.  
Attn: Yukinori Yamane  
Ote Center Building, 1-1-3  
Otemachi, Chiyoda-ku  
Tokyo  
Japan

#### ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by Kuraray Co., Ltd. for the MICROFADE ballast water treatment system (BWTS). This letter, which is a revision to a previous Coast Guard AMS acceptance letter for this BWTS dated October 28, 2013, grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for ten MICROFADE models, as type approved by the Ministry of Land, Infrastructure, Transport, and Tourism under the authority of the government of Japan and as detailed in the Ministry's revised type approval (TA) certificate No. 6 issued on May 29, 2014.

The following Kuraray MICROFADE models are accepted for AMS use in U.S. waters:

- MF-125 with a treatment rated capacity (TRC) of 125 cubic meters/hour ( $m^3/h$ );
- MF-250 with a TRC of 250  $m^3/h$ ;
- MF-500 with a TRC of 500  $m^3/h$ ;
- MF-750 with a TRC of 750  $m^3/h$ ;
- MF-1000 with a TRC of 1000  $m^3/h$ ;
- MF-1250 with a TRC of 1250  $m^3/h$ ;
- MF-1500 with a TRC of 1500  $m^3/h$ ;
- MF-2000 with a TRC of 2000  $m^3/h$ ;
- MF-3000 with a TRC of 3000  $m^3/h$ ;
- MF-4000 with a TRC of 4000  $m^3/h$ .

The Kuraray MICROFADE BWTS is assigned the following AMS identification number:

AMS-2013-Kuraray MICROFADE-001

Coast Guard acceptance of the Kuraray MICROFADE 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 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 Kuraray MICROFADE BWTS as an AMS indicate that the BWTS meets requirements for Coast Guard type approval.

The following conditions apply for the operation of the Kuraray MICROFADE AMS in U.S. waters:

1. The AMS manufacturer must comply with all the general conditions of certification stipulated in the TA certificate issued by the Ministry of Land, Infrastructure, Transport, and Tourism under the authority of the government of Japan, 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  
Tel: 202-372-1402  
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 this AMS must be conducted in accordance with all specifications and limiting conditions stipulated on the TA certificate 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. **Design dose of oxidants:** The Kuraray MICROFADE BWTS is designed to operate with a total residual oxidant (TRO) concentration of 2.0 milligrams per liter (mg/L) in the ballast line.
- b. **Differential pressure across the filter:** The Kuraray MICROFADE BWTS is preset to automatically back flush if the differential pressure across the filter reaches a predetermined value. When the differential pressure reaches 0.5 bar, an alarm will actuate indicating high filter differential pressure. If the differential pressure across the filter reaches 1.0 bar, another alarm will sound, and the system will shut down.
- c. **Flow rates:** The flow rate of ballast water through the system should not exceed the treatment rated capacity (TRC) for the installed Kuraray MICROFADE model.
- 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 the TRO analyzer, which automatically controls the neutralizing unit to achieve the permissible 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 available for review onboard the vessel.

4. Because the Kuraray MICROFADE BWTS has not been adequately tested in freshwater, its use as an AMS is limited to the treatment of marine and brackish water with a practical salinity unit (PSU) concentration greater than 1.
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 the following: (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 the following: (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-Kuraray MICROFADE-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.

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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](mailto:John.A.Meehan@uscg.mil).

Sincerely,

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