U.S. Department of Homeland Security
United States Coast Guard

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Hyundai Heavy Industries Co., Ltd
Attn: Sung-Hwan Yoon
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Dong-gu, Ulsan 682-792
Republic of Korea

ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by Hyundai Heavy Industries Co., LTD (Hyundai), for the HiBallast ballast water treatment system (BWTS). This letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for the following HiBallast BWTS models:

> HiBallast System HiB-75, HiB-150, HiB-225, HiB-300A, HiB-300B, HiB-500, HiB-600, HiB-900, HiB-1000, HiB-1200, HiB-1200, HiB-1500, HiB-2000 and associated filter housing as type approved by the Ministry of Land, Transport and Maritime Affairs of the Republic of Korea and detailed in the following type approval certificates issued 11 November 2011:

- Republic of Korea type approval certificate 2011-21 for HiB-75
- Republic of Korea type approval certificate 2011-22 for HiB-150
- Republic of Korea type approval certificate 2011-23 for HiB-225
- Republic of Korea type approval certificate 2011-24 for HiB-300A
- Republic of Korea type approval certificate 2011-25 for HiB-300B
- Republic of Korea type approval certificate 2011-26 for HiB-500
- Republic of Korea type approval certificate 2011-27 for HiB-600
- Republic of Korea type approval certificate 2011-28 for HiB-900
- Republic of Korea type approval certificate 2011-29 for HiB-1000
- Republic of Korea type approval certificate 2011-30 for HiB-1200
- Republic of Korea type approval certificate 2011-31 for HiB-1500
- Republic of Korea type approval certificate 2011-32 for HiB-2000

The HiBallast BWTSs are assigned the following AMS identification number:

> AMS-2013-Hyundai-HiBallast-001

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

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

1. The AMS manufacturer must comply with all general conditions of certification stipulated in the type approval certificates issued by the Republic of Korea and 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 Office of Environmental Standards (OES-3) at the following address or email:

   Environmental Standards Division (CG-OES-3)
   U.S. Coast Guard Headquarters
   2100 Second Street SW
   Washington, DC 20593
   Tel: 202-372-1402
   e-mail: environmental_standards@uscg.mil

2. Because the AMS 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.

3. 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.

4. Operation and maintenance 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 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 system should not exceed the treatment rated capacity (TRC) for the installed system.

b. **Design dose of active substances:** The design dose of 1,000 mg/L should be maintained in the side stream, which corresponds to approximately 1 percent of the total flow rate. A desired total residual oxidant (TRO) concentration of 9.0 mg/L should be maintained in the main ballast water line through the ballasting operation.

c. **Differential pressure across the filter:** The pressure differential across the filter should not exceed 0.7 bar. The HiBallast ballast water system is set to automatically back flush if the differential pressure across the filter is 0.5 bar for 3 seconds. An alarm is sounded, and the system will stop operating if the differential pressure across the filter is 1 bar for 30 seconds.

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 limits. The oxidant residual is measured by the TRO analyzer, which automatically controls the neutralization process to achieve the desired TRO concentration.

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.

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 33CFR 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 (Marine Safety Center)
U.S. Coast Guard Marine Safety Center
2100 2nd St. SW., Stop 7102
Washington, DC 20593-7102
Telephone: 202-475-3402
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 33CFR 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-Hyundai-HiBallast-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.

AMS-2013-Hyundai-HiBallast-001
June 24, 2013

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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 Ms. Regina Bergner of my staff at (202) 372-1431 or Regina.R.Bergner@uscg.mil.

Sincerely,

J. G. LANTZ
Director
Commercial Regulations and Standards
U.S. Coast Guard, COMDT (CG-5PS)