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March 24, 2017

Qingdao Headway Technology Company, Ltd.
Attn: Ms. Nova Shin Lau
4/F, Bldg #5, Area A
Huite Industrial City
No. 177, Zhuzhou Road, Qingdao
P.R. China 266101

ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE - REVISION #4

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by Qingdao Headway Technology Co., Ltd. (Headway), for the OceanGuard ballast water treatment system (BWTS), as well as additional materials submitted with new type approval certificate issued by Det Norske Veritas - Germanischer Lloyd (DNV-GL). Previous AMS acceptance letters include OceanGuard models with treatment rated capacities (TRC) ranging from 65 to 5,200 cubic meters per hour (m^3/h). *This revised letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for the previously accepted OceanGuard models, the HMT-50 through HMT-4000, as detailed in DNV-GL type approval certificate No. TAP000001U, Revision No. 2, issued on February 10, 2017.*

The following OceanGuard models are accepted for use as an AMS in U.S. waters:

- HMT-50 with a TRC of 65 m^3/h
- HMT-100 with a TRC of 130 m^3/h
- HMT-200 with a TRC of 260 m^3/h
- HMT-300 with a TRC of 390 m^3/h
- HMT-450 with a TRC of 585 m^3/h
- HMT-600 with a TRC of 780 m^3/h
- HMT-800 with a TRC of 1,040 m^3/h
- HMT-1000 with a TRC of 1,300 m^3/h
- HMT-1200 with a TRC of 1,560 m^3/h
- HMT-1500 with a TRC of 1,950 m^3/h
- HMT-2000 with a TRC of 2,600 m^3/h
- HMT-2500 with a TRC of 3,250 m^3/h
- HMT-3000 with a TRC of 3,900 m^3/h
- HMT-4000 with a TRC of 5,200 m^3/h

These OceanGuard BWTSs are assigned the following AMS identification number:

AMS-2017-Headway-OceanGuard-001

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

The following conditions apply for the operation of the OceanGuard 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 DNV-GL on behalf of the Norwegian Maritime Administration, 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 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 ballast water treatment system should not exceed the TRC for the installed model. The type approval certificate allows several EUT units to be installed in parallel to obtain higher flow rates and TRC values. Installations involving parallel EUT configurations must have ballast water flow control for each treatment unit and must be approved by DNV-GL on a case-by-case basis.
- b. **Design dose of active substances:** The design dose of active substance requires that a total residual oxidant (TRO) concentration of 2.0 milligrams per liter (mg/L) be maintained in the ballast water line and treated ballast tanks. This minimum average TRO concentration is required by the type approval certificate.
- c. **Differential pressure across the filter:** The OceanGuard BWTS is type approved with four different automatic back-flushing filter types: (1) the OceanGuard Automatic Back-flush 50-micron (μm) mesh filter, (2) the Boll & Kirch 40- μm wire mesh filter, (3) the Filtersafe 50- μm mesh filter, and (4) S-ZF 50-micron (μm) mesh filter. The appropriate filter size will depend on the model, desired ballast flow capacity, and corresponding TRC. The DNV-GL type approval certificate provides information on permissible pressure differentials and automatic back-flushing set points for the three filter types.
- d. **Maximum allowable discharge concentration (MADC):** Prior to the discharge of treated ballast water, the TRO analyzer measures residual oxidant concentration to ensure compliance with applicable federal, state, and local water quality effluent limits. If the TRO concentration exceeds applicable limits, the TRO analyzer automatically controls the neutralizing unit to achieve the desired concentration of TRO in discharged ballast water.

A historical record documenting that the system has been operated within the criteria, including a record of any alarm conditions, any deviations from the manufacturer's operating instructions, or any conditions and requirements noted above, shall be available for review onboard the vessel.

4. Because the OceanGuard BWTS 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.
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 must be 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 Headquarters
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7509
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, any irreparable or recurring 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. Report the AMS identification number, located toward the beginning of this letter and in bolded text, in “Vessel Information” section in the space labeled “Onboard BW Management System” and;
- b. In the “Ballast Water History” section, for each tank for which the AMS was used, select the “Event” as “Onboard Treatment” for one of the reported tank events (e.g., Discharge, Onboard treatment, Source).

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 AMS installed 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 Ms. Debbie Duckworth of my staff at (202) 372-1429 or Debbie.Duckworth@uscg.mil.

Sincerely,


S. J. KELLY
Captain, U.S. Coast Guard
Office of Operating and Environmental Standards