



5760  
June 15, 2016

Sunbo Industries. Co., Ltd. and DSEC Co., Ltd  
Attn: Choi Geum-Sik (Sunbo), KIM Man-Soo (DSEC)  
80 Dasan-ro, Saha-Gu (Sunbo)  
67 Chungjang-daero 13beon-gil, Jung-gu (DSEC)  
Busan, Republic of Korea

#### ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by Sunbo Industries. Co., Ltd. and DSEC Co., Ltd. for the BlueZone ballast water treatment system (BWTS). This letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for the BlueZone BWTS models specified below. The models are type approved by the Ministry of Oceans and Fisheries of the Republic of Korea, as detailed in type approval certificate No. 2015-73 issued September 8, 2015, and type approval certificates No. 2015-74 to 2015-83 issued September 21, 2015.

BlueZone models with the following treatment rated capacity (TRC), as expressed in cubic meters per hour (m<sup>3</sup>/hr), are accepted for use as an AMS in U.S. waters:

- BlueZone System DNS250 with a TRC of 250 m<sup>3</sup>/h
- BlueZone System DNS500 with a TRC of 500 m<sup>3</sup>/h
- BlueZone System DNS600 with a TRC of 600 m<sup>3</sup>/h
- BlueZone System DNS1000 with a TRC of 1000 m<sup>3</sup>/h
- BlueZone System DNS1500 with a TRC of 1500 m<sup>3</sup>/h
- BlueZone System DNS2000 with a TRC of 2000 m<sup>3</sup>/h
- BlueZone System DNS2400 with a TRC of 2400 m<sup>3</sup>/h
- BlueZone System DNS3000 with a TRC of 3000 m<sup>3</sup>/h
- BlueZone System DNS4000 with a TRC of 4000 m<sup>3</sup>/h
- BlueZone System DNS5000 with a TRC of 5000 m<sup>3</sup>/h
- BlueZone System DNS6000 with a TRC of 6000 m<sup>3</sup>/h

The BlueZone models are assigned the following AMS identification number:

AMS-2016-Sunbo-BlueZone-001

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

The following conditions apply for the operation of the BlueZone 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 Oceans and Fisheries of the Republic of Korea, 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 Office of Environmental Standards (OES-3) at the following address or email:

COMMANDANT (CG-OES-3)  
U.S. 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 type approval certificate and with the manufacturers 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 system should not exceed the TRC for the installed BlueZone model, as specified on the type approval certificate. The system is designed to operate without a filtration unit.
- b. **Design dose of active substances:** During ballasting, the ozone generator produces gaseous ozone and disperses it into the ballast water through the micro bubble nozzle. Ozone ( $O_3$ ) reacts with bromine in the ballast water to produce the total residual oxidant (TRO) dose, which consists of hypobromous acid (HOBr) and hypobromite ion (OBr). The maximum type-approved TRO dose is 2.3 mg/L as chlorine ( $Cl_2$ ). The minimum allowable TRO dose is 2.01 mg/L. Ozone dose is determined by sensor measurements of  $O_3$  product (g/hr) and ballast flow ( $m^3/hr$ ). The TRO concentration is measured by TRO #1 sensor (the online chlorine analyzer) and can be controlled automatically by the Human Machine Interface and Programmable Logic Controller.
- c. **Maximum allowable discharge concentration (MADC):** Residual concentrations of active substances must be measured before discharge to ensure compliance with all applicable federal, state, and local water quality effluent limits. Before being discharged, ballast water passes through the neutralization unit where a solution of sodium thiosulfate is injected into the de-ballasting line to neutralize active substances. The injection rate of the neutralizer solution is controlled by monitoring the de-ballasting flow rate and TRO concentration. The BlueZone neutralization unit is designed to maintain a MADC of less than 0.2 mg/L TRO as chlorine.
- d. **Ballast Water Salinity:** The BlueZone BWTS is accepted for use only in waters with a salinity of greater than 20 practical salinity units (PSU). The supplement to the type approval certificate states the system is designed to operate within a salinity range of 20.44 to 34.3 PSU.
- e. **Ballast Water Temperature:** The BlueZone system is designed to operate in water temperatures ranging from 20.35 to 25.49 °C. The BlueZone system is not accepted as an AMS for use in US arctic waters.

*A historical record documenting that the system has been operated within these 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. 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.

5. Use of the AMS must be 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.
6. 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.

7. 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.
8. 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.
9. 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-2016-Sunbo-BlueZone-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 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. Regina Bergner of my staff at (202) 372-1431 or Regina.R.Bergner@uscg.mil.

Sincerely,



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