



5760  
March 22, 2017

COSCO (Weihai) Shipbuilding Marine Technology Co., Ltd.  
Attn: Ms. Huang Lingyan  
Technology Department  
No. 19, Shenyang South Rd.  
Huancui District, Weihai, 264203  
Shandong, P.R. China

#### ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE – REVISION #1

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by COSCO Shipbuilding Industry Company for the Blue Ocean Shield ballast water treatment system (BWTS). This letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for Blue Ocean Shield BWTS BOS05 and BOS05-Ex models with treatment rated capacities of 100 to 3,000 cubic meters/hour ( $\text{cm}^3/\text{hr}$ ) and associated filter modules. The models are type approved by the China Classification Society (CCS) on behalf of the People's Republic of China and detailed in CCS type approval certificate No. QD14T00067, issued 15 February 2015.

COSCO Blue Ocean Shield models with the following treatment rated capacity (TRC), as expressed in cubic meters per hour ( $\text{m}^3/\text{hr}$ ), are accepted for use as an AMS in U.S. waters:

- BOS05-100 or BOS05-100-Ex with a TRC of 100  $\text{m}^3/\text{h}$
- BOS05-200 or BOS05-200-Ex with a TRC of 200  $\text{m}^3/\text{h}$
- BOS05-300 or BOS05-300-Ex with a TRC of 300  $\text{m}^3/\text{h}$
- BOS05-500 or BOS05-500-Ex with a TRC of 500  $\text{m}^3/\text{h}$
- BOS05-700 or BOS05-700-Ex with a TRC of 700  $\text{m}^3/\text{h}$
- BOS05-900 or BOS05-900-Ex with a TRC of 900  $\text{m}^3/\text{h}$
- BOS05-1200 or BOS05-1200-Ex with a TRC of 1,200  $\text{m}^3/\text{h}$
- BOS05-1400 or BOS05-1400-Ex with a TRC of 1,400  $\text{m}^3/\text{h}$
- BOS05-1600 or BOS05-1600-Ex with a TRC of 1,600  $\text{m}^3/\text{h}$
- BOS05-1800 or BOS05-1800-Ex with a TRC of 1,800  $\text{m}^3/\text{h}$
- BOS05-2500 or BOS05-2500-Ex with a TRC of 2,500  $\text{m}^3/\text{h}$
- BOS05-3000 or BOS05-3000-Ex with a TRC of 3,000  $\text{m}^3/\text{h}$

The COSCO Blue Ocean Shield BWTS models are assigned the following AMS identification number:

**AMS-2017-COSCO BOS-001**

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

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

1. The AMS manufacturer must comply with all general conditions of certification stipulated in the type approval certificate issued under the Authority of the Maritime Safety Administration of the Peoples Republic of China by the China Classification Society, 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](mailto: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 certificates 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 BOS model. A historical record of flow rate is available via readouts from the control panel.
- b. **Differential pressure across the filter:** The pressure differential across the filter should not exceed 2.0 bar (0.2 MPa). The BOS BWTS is set to automatically back flush when 1.0 bar (0.1 MPa) pressure differential is detected across the filter. If high differential pressure between 1.5 bar (0.15 MPa) and 2.0 bar (0.2 MPa) is detected, a visual alarm will flash on the monitors at the control stations, and the system will back flush. If the differential pressure across the filter exceeds 2.0 bar (0.2 MPa), audible and visual alarms will activate at all control panels, and the system will automatically shut down.
- c. **UV intensity:** The BOS BWTS is designed to deliver 200 millijoule/square centimeter ( $\text{mJ}/\text{cm}^2$ ) UV intensity, as measured by the remote UV intensity sensor in the UV chamber during treatment of ballast water. The BOS BWTS must maintain a minimum of  $150 \text{ mJ}/\text{cm}^2$  UV intensity (75% of the design UV intensity) in order to meet the biological efficacy standards and operate in accordance with the requirements stated in the CCS type approval certificate. If UV intensity measured at the remote sensor falls below  $150 \text{ mJ}/\text{cm}^2$ , the BOS BWTS will activate visual and audible alarms at all control panels, and the system will automatically shut down.

*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. Because the COSCO BOS 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 33CFR 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](mailto: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, 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.
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. 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;

Subj: AMS ACCEPTANCE LETTER – COSCO BOS  
REVISION #1

5760  
March 22, 2017

- 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 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 Ms. Debbie Duckworth of my staff at (202) 372-1429 or [Debbie.Duckworth@uscg.mil](mailto:Debbie.Duckworth@uscg.mil).

Sincerely,



S.J. KELLY

Captain, U.S. Coast Guard

Office of Operating and Environmental Standards