

U.S. Department of
Homeland Security

United States
Coast Guard



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5760
January 22, 2017

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ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE – REVISION #1

The Coast Guard has completed its review of the materials submitted to revise the Alternate Management System (AMS) acceptance of OceanSaver MK II ballast water treatment system (BWTS). This letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for the OceanSaver MK II models and filters as type approved by Det Norske Veritas (DNV) on behalf of the Norwegian Maritime Directorate and as detailed in the type approval certificate TAP000001M, issued January 1, 2016. *This revised letter recognizes the renewed type approval for the following models listed in the certificate:*

The following OceanSaver C2E- models are accepted for use as an AMS in U.S. waters:

Constant Flow Models:

- | | | |
|-------------------|-------------------|-------------------|
| - C2E-S200/5S/13 | - C2E-M1630/5S/13 | - C2E-L3230/5S/17 |
| - C2E-S230/5S/17 | - C2E-M1835/5S/13 | - C2E-L3265/5S/13 |
| - C2E-S405/5S/13 | - C2E-M1845/5S/17 | - C2E-L3460/5S/17 |
| - C2E-S460/5S/17 | - C2E-M2040/5S/13 | - C2E-L3465/5S/13 |
| - C2E-S610/5S/13 | - C2E-M2075/5S/17 | - C2E-L3670/5S/13 |
| - C2E-S690/5S/17 | - C2E-M2245/5S/13 | - C2E-L3690/5S/17 |
| - C2E-S815/5S/13 | - C2E-M2305/5S/17 | - C2E-L3875/5S/13 |
| - C2E-S920/5S/17 | - C2E-L2445/5S/13 | - C2E-L3920/5S/17 |
| - C2E-S1020/5S/13 | - C2E-M2535/5S/17 | - C2E-L4080/5S/13 |
| - C2E-S1150/5S/17 | - C2E-L2650/5S/13 | - C2E-L4150/5S/17 |
| - C2E-M1220/5S/13 | - C2E-L2765/5S/17 | - C2E-L4385/5S/17 |
| - C2E-M1385/5S/17 | - C2E-L2855/5S/13 | - C2E-L4615/5S/17 |
| - C2E-M1425/5S/13 | - C2E-L3000/5S/17 | |
| - C2E-M1615/5S/17 | - C2E-L3060/5S/13 | |

Variable Flow Models:

- C2E-200A-5/10	- C2E-2000A-10/15	- C2E-3800A-20/25
- C2E-400A-5/10	- C2E-2200A-15/20	- C2E-4000A-20/25
- C2E-600A-5/10	- C2E-2400A-15/20	- C2E-4500A-25/30
- C2E-800A-5/10	- C2E-2600A-15/20	- C2E-5000A-25/30
- C2E-1000A-5/10	- C2E-2800A-15/20	- C2E-5500A-30/35
- C2E-1200A-10/15	- C2E-3000A-15/20	- C2E-6000A-30/35
- C2E-1400A-10/15	- C2E-3200A-20/25	- C2E-6600A-35/40
- C2E-1600A-10/15	- C2E-3400A-20/25	- C2E-7200A-35/40
- C2E-1800A-10/15	- C2E-3600A-20/25	

The OceanSaver MK II models retain the original AMS identification number:

AMS-2013-OceanSaver MK II-001

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

The following conditions apply for the operation of the OceanSaver 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 on behalf of the Norwegian Maritime Directorate, 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:

Environmental Standards Division (CG-OES-3)
U.S. Coast Guard Headquarters
U.S. 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. 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. The oxidant neutralization unit, the C2E cell cleaning module, the high salinity water source unit, and the electrolyte heating unit used during operation of the OceanSaver BWTS were not tested during type approval of this ballast water treatment system and are not covered by the DNV type approval certificate. Installation of these units or components must be approved by the flag administration or its representative on a case-by-case basis.
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 OceanSaver BWTS has a ballast water flow rate maximum capacity of 204 to 231 cubic meters per hour (m³/h) for each C2E electrolytic disinfectant membrane cell. Greater treatment rated capacities (TRC) are achieved by increasing the number of OceanSaver BWTS C2E cells in the treatment system. The DNV type approval certificate specifies the requirements relating to the fabrication and arrangement of C2E cells in multiple cell installations.
 - b. **Design dose of oxidants:** The OceanSaver BWTS is designed to operate with a total residual oxidant (TRO) concentration between 1.6 and 2.5 milligrams per liter (mg/L). Sensors located downstream of the system's C2E cells monitor the TRO concentration. Output from these sensors is displayed on the human-machine interface (HMI) unit of the PLC.
 - c. **Differential pressure across the filter:** The type approval certificate allows the use of FilterSafe or Moss Hydro automatic backwashing filters with 40- μ mesh screens.

Backwash initiates when the differential pressure across the filter is greater than 0.5 bar. Minimum filter inlet pressure is 1.5 bar when using a backwash pump and 2.0 bar without a pump. An alert notice appears on the HMI when back flushing is initiated.

- d. **Maximum allowable discharge concentration (MADC):** Prior to the discharge of treated ballast water, the TRO concentration must be measured to ensure compliance with all applicable federal, state, and local water quality effluent limits for all discharged chemicals, including disinfectant by-products (DBP). This BWTS employs sensors to monitor the TRO concentration at the time of ballast water discharge. The system automatically activates the oxidant neutralizer unit when this TRO concentration exceeds the MADC established by applicable water quality effluent limits.
- e. **High Salinity Water Source:** The OceanSaver BWTS requires a high salinity (>20 PSU) water source when the salinity of the intake ballast water falls below 20 PSU. The system automatically switches to the interconnected high salinity water source unit when the feed water to the C2E electrolytic membrane cell or cells is less than 20 PSU, as measured by an in-line salinity meter.
- f. **Temperature control of electrolytic oxidant:** In colder waters, the OceanSaver BWTS operates by heating the electrolyte that serves as the disinfectant oxidant. The system heats the electrolyte to 13 °C (for system model numbers ending in “13”) or to 17 °C (for system model numbers ending in “17”). The electrolyte is heated when the temperature of the intake ballast water falls below these threshold temperature values. This BWTS employs an auxiliary heating source and temperature monitors that are capable of maintaining the electrolyte at the required temperature, as needed.

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.

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 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

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 number of tanks treated by the AMS in the space labeled "Underwent Alternative Management";

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- b. Report the AMS identification number, located toward the beginning of this letter and in bolded text, in the space labeled “Please specify alternative method(s) used, if any,” and;
- c. 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. 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