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

Commandant
United States Coast Guard

2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7509
Staff Symbol: CG-OES
Phone: 202-372-1431
Fax: 202-372-1431
Email: Regina.R.Bergner@uscg.mil

5760
June 16, 2016

Nippon Yuka Kogyo Company, Ltd.
Attention: Aya Kutsuna
Deputy Manager, Sales Division
Yusen Building 3F
3-9 Kaigandori, Nakaku
Yokohama, 231-0002 Japan

ALTERNATE MANAGEMENT SYSTEM ACCEPTANCE

The Coast Guard has completed its review of the Alternate Management System (AMS) application submitted by Nippon Yuka Kogyo Company, Ltd., for the Sky-System ballast water treatment system (BWTS). This letter grants AMS acceptance in accordance with the requirements of 33 CFR 151.2026 for Sky-System models, as type approved by the Ministry of Land, Infrastructure, Transport, and Tourism under the authority of the government of Japan and as detailed in type approval (TA) certificate No. 13 issued on October 20, 2014.

The following specific Sky-System configurations are accepted for use as an AMS in U.S. waters, with treatment rated capacity (TRC) ranging from 25 to 34,000 cubic meters per hour (m^3/h):

Treatment Rated Capacity TRC (m^3/h)	**PERACLEAN® Ocean injection pump model**	**Neutralizer injection pump model**
≥25 and ≤30	GM12	GM12
>30 and ≤100	GM12	GM12 x 2 or GM15
>100 and ≤800	GM15	GM15 x 4 or GM25
>800 and ≤1,400	GM15	GM25 x 2 or GM32
>1,400 and ≤1,600	GM25	GM25 x 2 or GM32
>1,600 and ≤5,400	GM25	GM32 x 4 or MDM25
>5,400 and ≤8,200	GM25	MDM25 x 2 or MDM40
>8,200 and ≤10,200	GM32	MDM25 x 2 or MDM40
>10,200 and ≤14,300	GM32	MDM40 x 2 or MDM65
14,300 and ≤17,000	GM32	MDM40 x 2
>17,000 and ≤20,500	GM32	MDM40 x 2
>20,500 and ≤28,700	GM32 x 2	MDM65 x 2
>28,700 and ≤34,000	GM32 x 2	MDM65 x 3

The Sky-System models are assigned the following AMS identification number:

AMS-2016-NYK-SkySystem-001

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

The following conditions apply for the operation of the Sky-System 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 Land, Infrastructure, Transport, and Tourism under the authority of the government of Japan, 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 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 system should not exceed the TRC for the installed Sky-System model, as specified on the type approval certificate and in any guidance or operating manuals provided by the manufacturer.

b. **Design dose of active substances:** The SKY-SYSTEM uses the PERACLEAN Ocean chemical treatment; the active substances in PERACLEAN Ocean are peracetic acid (PAA) and hydrogen peroxide (H_2O_2). During uptake, the PERACLEAN Ocean treatment concentration injected into the ballast water stream is 150 mg/L. The ballast water flow is measured by an electromagnetic flow meter. Based on these readings, the system controls the operation of the PERACLEAN Ocean injection pump to deliver a dose of 150 mg/L.

c. **Maximum allowable discharge concentrations (MADC):** Concentrations of residual active substance must be measured before discharge to ensure compliance with all applicable federal, state, and local water quality effluent limits. The residual concentration of PERACLEAN Ocean must be neutralized with a 15% solution of sodium sulfite; the amount of neutralizer required will depend on the salinity and the concentration of PAA and H_2O_2. The type-approved MADC for neutralized ballast water is less than 0.3 mg/L of PAA and less than 0.5mg/L of H_2O_2. During de-ballasting, two sensors continuously measure the conductivity of the ballast water and the concentrations of PAA and H_2O_2. For the initial 7.5 minutes of de-ballasting, the system is dosed with excess neutralizer regardless of the PAA and H_2O_2 concentration. During the remainder of discharge operations, neutralizer is injected automatically depending on the measured concentrations of residual active substances.

d. **Management and Storage of Chemicals:** PERACLEAN Ocean and the sodium sulfite neutralizer must be stored between 10 and 30 °C. PERACLEAN Ocean should not be allowed to mix with the neutralizer or any contaminants. PERACLEAN Ocean is a strong oxidant and may react when mixed or contaminated, potentially producing a large amount of steam and oxygen gas, putting the crew and vessel at risk.

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. The Sky-System BWTS is designed to operate in waters with a practical salinity unit (PSU) concentration of 0.1 or greater. However, because the Sky-System BWTS has not been adequately tested in freshwater, its use as an AMS is limited to the treatment of marine and brackish waters with PSU concentrations 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 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 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 33 CFR 151.2060, as follows:

    a. Report the number of tanks treated by the AMS in the space labeled "Underwent Alternative Management,"

    b. Report the AMS identification number (AMS-2016-NYK-SkySystem -001) in the space labeled "Please specify alternative method(s) used, if any," and

    c. Report the "BW MANAGEMENT PRACTICES" 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