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

Commandant
United States Coast Guard

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5760
December 2, 2021

Norwegian Greentech AS
Attn: Mr. Kristoffer Berge
Mjølstadnesvegen 15
6092 Fosnavåg
Norway

Dear Mr. Berge,

The Coast Guard has completed its review of materials submitted in addition to the Alternate Management System (AMS) application received from Norwegian Greentech AS for the NGT ballast water treatment system (BWTS). These NGT models are type approved by Det Norske Veritas (DNV) on behalf of the Norwegian Maritime Directorate, as detailed in type approval certificate No. TAP000028V issued on June 11, 2021. Accordingly, the following NGT models, using mechanical filtration and ultraviolet radiation, with the following treatment rated capacity (TRC) expressed in cubic meters per hour (m^3/hr), are accepted for use as an AMS in U.S. waters:

- NGT DL1-BK273 with a maximum TRC of 30 m³/h;
- NGT DL2-BK273 with a maximum TRC of 60 m³/h;
- NGT DL3-BK324 with a maximum TRC of 90 m³/h;
- NGT DL4-BK324 with a maximum TRC of 150 m³/h;
- NGT DL4-BK356 with a maximum TRC of 150 m³/h;
- NGT DXL6-BK356 with a maximum TRC of 200 m³/h;
- NGT DXL9-BK356 with a maximum TRC of 260 m³/h;
- NGT DXL9-BK419 with a maximum TRC of 260 m³/h;
- NGT DXL12-BK419 with a maximum TRC of 350 m³/h;
- NGT D4XL8-BK419 with a maximum TRC of 460 m³/h;
- NGT D4XL10-BK419 with a maximum TRC of 600 m³/h;
- NGT D4XL10-BK521 with a maximum TRC of 600 m³/h;
- NGT D4XL10-BK600 with a maximum TRC of 600 m³/h;
- NGT D4XL12-BK600 with a maximum TRC of 750 m³/h;
- NGT D4XL12-BK750 with a maximum TRC of 750 m³/h;
- NGT D5XL14-BK750 with a maximum TRC of 1,005 m³/h;
- NGT D5XL16-BK750 with a maximum TRC of 1,180 m³/h; and
- NGT D5XL18-BK750 with a maximum TRC of 1,274 m³/h.

The NGT BWTS is assigned the following AMS identification number:

AMS-2021-NORWEGIAN GREENTECH NGT-001

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

The following conditions apply for the operation of the Norwegian Greentech NGT 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:

   COMMANDANT (CG-OES-3)
   United States 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. 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 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 TRC of a specific NGT BWMS model is limited by the maximum flow rate of either the selected ultraviolet (UV) chamber or the Bollfilter aquaBoll 6.18.3 filter model, whichever is lower. Operation must be confined within the parameters of UV limits and Flow rates described in the type approval certification and operating manual.

UV Chamber model by best UV	**TRC** [m3/h]
DL1	30
DL2	60
DL3	90
DL4	150
DXL6	200
DXL9	260
DXL12	350
D4XL8	460
D4XL10	600
D4XL12	750
D5XL14	1005
D5XL16	1180
D5XL18	1323

Bolfilter aquaBoll 6.18.3 filter model	**TRC** [m3/h]
273	62
324	94
356	204
419	378
521	518
600	614
750	1274

b. **UV intensity:** At high UV transmittance levels, the BWMS reduces the power to the UV lamps in steps from 100% down to 60%. At lower UV transmittance levels, the BWMS monitors the UV intensity and is designed to adjust the flow rate by controlling the ballast water pump(s).

c. **Operating Pressure:** For all models, the minimum inlet operating pressure is 1.5 bar and the maximum operating pressure is 10 bar.

d. **Differential pressure across the filter:** For all models, the filter differential pressure triggering backflushing is 0.3 bar and the maximum filter differential pressure of 1.0 bar are allowed.

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. Salinity or temperature are not limiting conditions for the ballast water treatment system.

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 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 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, 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 look forward to working with you throughout the type approval process. If you have any questions concerning this letter, please contact Ms. Debbie Duckworth of my staff at (202) 372-1429 or Debbie.Duckworth@uscg.mil.

Sincerely,

J. D. BUTWID
Commander, U. S. Coast Guard
Chief, Operating and Environmental Standard