



## **BWMS Manufacturer Application to NSF International for Compliance with Requirements of 46 CFR 162.060**

### **Submittal to NSF International**

#### **Applicable Documents:**

1. *Application Form for Evaluation, Inspection and Testing of BWMS for Submittal to the U.S. Coast Guard per Provisions of 46 CFR 160.060.*
2. *Interim BWMS Information Required for Submittal with Application Form.*

#### **Instructions for Submittal:**

1. Applicants must provide a completed Application Form, along with all information requested in the BWMS Required Information for Submittal with Application Form. If information is not available or if an item is not applicable, please respond nonetheless to the Application field, providing a clear explanation.
2. All documents submitted with this Application must be in pdf format.
3. All documents must be submitted on a CD that can be copied, as needed, to provide to reviewers.
4. Documents must be labeled using the item numbers indicated in the Application (e.g., design drawings should be indicated as “Part II, Section 6.a”, or a copy of existing data test results for shipboard testing would be labeled as “Part III, Section 2.b.vi.2”).
5. Failure to provide all information requested in the Application will delay entry into the testing/evaluation queue.
6. The Application Form and information package must be accompanied by a non-refundable payment to NSF International in the amount of \$2,500 (US) for completeness review of the Application package.
7. The Application and accompanying documentation must be submitted to:

Mr. Thomas Stevens  
NSF International  
789 North Dixboro Road  
Ann Arbor, MI 48105

Questions may be addressed to Tom Stevens at [stevenst@nsf.org](mailto:stevenst@nsf.org).

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**Interim  
BWMS Information  
Required for Submittal with Application Form**

**I. Manufacturer Information (Application Form)**

Complete the *Application Form for Evaluation, Inspection and Testing of BWMS for Submittal to the U.S. Coast Guard per Provisions of 46 CFR 160.060.*

**II. BWMS Operational Information**

1. BWMS for USCG approval (system to be tested or for which test data is provided):
  - a) Model designation.
  - b) Hydraulic flow rate (m<sup>3</sup>/hour) – provide any limitations or ranges that apply.
  - c) Salinities (fresh, brackish, marine, all) – list all that apply.
  - d) Points of treatment (uptake, discharge, in transit) – list all that apply.
  - e) Retention time requirements.
  - f) Other limitations or considerations for USCG approval (see item 3.e below).
2. Model Series Information – for each model in a series, provide:
  - a) Model designation.
  - b) Hydraulic flow rate (m<sup>3</sup>/hour) – provide any limitations or ranges that apply.
  - c) Salinities (fresh, brackish, marine, all) – list all that apply.
  - d) Points of treatment (uptake, discharge, in transit) – list all that apply.
  - e) Retention time requirements.
  - f) Other limitations or considerations for USCG approval (see item 3.e below).
  - g) Include mathematical calculations, computational fluid dynamics modeling, etc. to support capacity claims for each model.
3. General Description of BWMS – Provide a general description of the BWMS including:
  - a) Treatment stages, treatment processes.
  - b) Physical configuration.
  - c) Materials of construction.
  - d) Means for integration of BWMS with the shipboard ballast system.
  - e) Any limitations in the range of shipboard or shore-side applications for the BWMS, including sizes and types of ships, placement in the ballast operation (uptake versus discharge treatment), standard treatment capacities, new or retrofit shipboard applications, etc.

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4. Operational Practicability – Please provide your best estimates regarding the following questions:
- a) Ballast water salinity or temperature operating limitations.
  - b) Ballasting flow rate operating range. Please describe.
  - c) Onboard physical configuration of the BWMS system flexibility, including general arrangement of installed equipment.
  - d) Operational requirements during installation (during ship build, at dry dock, en route in existing ship).
  - e) Required special utility connections (power, water, air), interconnections with shipboard piping and equipment, storage requirements, or other ancillary requirements for operation of this system in a ship.
  - f) Required electrical, instrumentation and control (EI&C) components may be required to operate the BWMS in a ship.
  - g) Required crew time for:
    - i. Routine system operation and maintenance.
    - ii. Emergency shut down and startup.
    - iii. Training for operation and maintenance.
    - iv. Training and equipment for health and safety protection during operation.
  - h) Required operational system support, including:
    - i. Power demand.
    - ii. Main and local control panels.
    - iii. Power distribution system.
    - iv. Power quality equipment.
    - v. Instrumentation and control system architecture.
    - vi. Process control.
  - i) Provide start-up, normal and emergency operating and shutdown procedures required for the BWMS.
  - j) The overall reliability of the proposed BWT system (e.g., percent downtime per 1,000 hours of operation).
5. Drawings and Schematics:
- a) Design drawings.
  - b) Complete bill of materials showing all components and specifications of the BWMS.
  - c) A list of any systems or components of the BWMS that may require certification as marine portable tanks.
  - d) A list of any pressure vessels used as a part of the BWMS, along with a description of the pressure vessel building standard, or code, or why the pressure vessel should be considered exempt from any requirements. Manufacturers must also submit detailed pressure vessel plans if they intend to fabricate pressure vessels, heat exchangers, evaporators, and similar appurtenances.
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6. Provide the O&M and Safety Manual, and Installation Instructions (if not included in Manual).
  7. Documentation of all necessary approvals, registrations, and other documents or certifications required for any active substances, preparations, or relevant chemicals used by the BWMS. The documentation must include:
    - a) A list of any active substances, preparations, or relevant chemicals that are used, produced, generated as a byproduct, and/or discharged in association with the operation of the BWMS.
    - b) A list of all limitations or restrictions that must be complied with during the approval testing and evaluations, including any water quality limits established by the Environmental Protection Agency (EPA), States, or tribes, under the Clean Water Act.
    - c) IMO GESAMP Basic and Final Approval for use of active substance(s) to treat ballast water onboard vessels.
    - d) US EPA Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) registration of pesticide(s) for use in treating ballast water.
  8. Mock up of BWMS name plate
  9. Information about vessels on which shipboard testing will be conducted:
    - a) Name of vessels and the vessel owners/operators.
    - b) Routes vessels traverse.
    - c) Letters of agreement from ship owners/operators agreeing to installation of the BWMS, crew participation in collection of operational data and providing access to the IL for testing purposes.
    - d) Evidence of enrollment in the U.S. Coast Guard's Shipboard Technology Evaluation Program if the vessel is to discharge treated ballast water to U.S. waters. If test vessels discharge treated ballast water into waters of other countries, please provide evidence that all necessary approvals and permits required for discharges of treated ballast water have been secured.
    - e) Evidence that the vessel's ballast water system will be provided with sampling ports arranged in order to collect representative samples of the vessel's ballast water, are designed and installed in accordance with the specifications in the ETV Protocol, and located:
      - i. As close as practicable to the BWMS prior to treatment to determine concentrations of living organisms upon uptake.
      - ii. As close as practicable to the BWMS overboard outlet prior to the discharge point to determine concentrations of living organisms prior to discharge.
      - iii. Elsewhere as necessary to ascertain the proper functioning of the BWMS.

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### III. BWMS Performance Testing History

1. Provide information about all testing and evaluations that have been completed on the BWMS to date.
2. If submitting existing test data generated during approval testing for a foreign administration in accordance with the International Maritime Organization's Guidelines for Approval of Ballast Water Management Systems (G8), please provide the following:
  - a) Land-based Testing
    - i. Name, location and primary contact information for Test Facility (TF) completing the testing.
    - ii. An affidavit of TF independence from the manufacturer, with no conflicts of interest.
    - iii. Copy of the Test Plan used for the testing.
    - iv. Copy of the Quality Plan used for the testing.
    - v. Copies of Standard Operating Procedures (SOPs) used for the testing.
    - vi. Copy of test report submitted to flag administration.
    - vii. Copy of data reports provided by test laboratory in preparation of test report.
    - viii. A letter authorizing NSF International, and subcontractors associated with NSF as an Independent Laboratory, access to all records and data generated during testing (this will allow NSF to obtain QA data, copies of laboratory log books and bench sheets, and other TF QA records).
  - b) Shipboard Testing
    - i. Name, location and primary contact information for Test Facility (TF) completing the testing.
    - ii. An affidavit of TF independence from the manufacturer.
    - iii. Copies of the Test Plan and Quality Plan used by the TF for the testing.
    - iv. Copies of Standard Operating Procedures (SOPs) used for the testing.
    - v. Copy of final test report submitted to flag administration and data reports used in preparation of the test report.
    - vi. Copy of the following information for the entire period of BWMS testing operations conducted on the vessel:
      - (1) All ballast water operations, including volumes and locations of uptake and discharge.
      - (2) Test results for all test cycles, even those in which the BWMS failed to meet the BWDS.
      - (3) All weather conditions and resultant effects on vessel orientation and vibration.
      - (4) Scheduled maintenance performed on the BWMS.
      - (5) Unscheduled maintenance and repair performed on the BWMS.

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- (6) Data for all engineering parameters monitored as appropriate to the specific BWMS.
  - (7) Consumption of all solutions, preparations, or other consumables necessary for the effective operation of the BWMS.
  - (8) All parameters necessary for tracking the functioning of the control and monitoring equipment.
  - (9) All instrument calibration methods and frequency of calibration.
- vii. A letter authorizing NSF International, and subcontractors associated with NSF as an Independent Laboratory, access to all records and data generated during testing (this will allow NSF to obtain QA data, copies of laboratory log books and bench sheets, and other TF QA records).

c) BWMS Component Testing

- i. Name, location and primary contact information for Test Facility (TF) completing the testing.
- ii. An affidavit of TF independence from the manufacturer.
- iii. Copies of the Test Plan and Quality Plan used by the TF for the testing.
- iv. Copies of Standard Operating Procedures (SOPs) used for the testing.
- v. Copy of test report submitted to foreign administration.
- vi. Copy of data reports provided by test laboratory used in preparation of test report.
- vii. A letter authorizing NSF International, and subcontractors associated with NSF as an Independent Laboratory, access to all records and data generated during testing (this will allow NSF to obtain QA data, copies of laboratory log books and bench sheets, and other TF QA records).