

reference, *see* §162.060-5). The independent laboratory performing approval tests and evaluations is responsible for ensuring the appropriate Quality Assurance and Quality Control procedures are implemented.

§ 162.060-38 Operation, Maintenance, and Safety Manual (OMSM).

(a) Each OMSM must include the following sections:

- (1) Table of contents.
- (2) Manufacturer's information.
- (3) Principles of ballast water management system (BWMS) operation, including—
 - (i) A complete description of the BWMS, methods and type(s) of technologies used in each treatment stage of the BWMS;
 - (ii) The theory of the BWMS' operation;
 - (iii) Any process or technology limitations of the BWMS;
 - (iv) Performance ranges and expectations of the system; and
 - (v) A description of the locations and conditions for which the BWMS is intended.
- (4) Major system components and shipboard application, including—
 - (i) A general description of the materials used for construction and installation of the BWMS;
 - (ii) A list of each major component that may be fitted differently in different vessels with a general description of the different arrangements schemes;
 - (iii) Any vessel type(s), services, or locations where the BWMS is not intended to be used;
 - (iv) Maximum and minimum flow and volume capacities of the BWMS;
 - (v) The dimensions and weight of the complete BWMS and required connection and flange sizes for all major components;
 - (vi) A description of all actual or potential effects of the BWMS on the vessel's ballast water, ballast water tanks, and ballast water piping and pumping systems;
 - (vii) A list of all active substances, relevant chemicals, and pesticides generated or stored onboard the vessel to be used by the BWMS; and

(viii) Information on whether the BWMS is designed to be used in hazardous locations.

(5) System and major system component drawings as applicable, including—

- (i) Process flow diagram(s) of the BWMS showing the main treatment processes, chemicals, and monitoring and control devices for the BWMS;
 - (ii) Footprint(s), drawings, and system schematics showing all major components and arrangements;
 - (iii) Drawings, containing a bill of materials, for the pumping and piping arrangements, and all related equipment provided with the BWMS;
 - (iv) All treatment application points, waste or recycling streams, and all sampling points integral to the BWMS;
 - (v) All locations and the sizes of all piping and utility connections for power, water, compressed air or other utilities as required by the BWMS;
 - (vi) Electrical wiring diagrams that include the location and electrical rating of power supply panels and BWMS control and monitoring equipment;
 - (vii) Unit(s), construction materials, standards, and labels on all drawings of equipment, piping, instruments, and appurtenances; and
 - (viii) An index of all drawings and diagrams.
- (6) A description of the BWMS's control and monitoring equipment and how it will be integrated with the existing shipboard ballast system, 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 description;
 - (vii) Operational set points, control loops, control algorithms, and alarm settings for routine maintenance, and emergency operations; and
 - (viii) All devices required for measuring appropriate parameters, such as pressure, temperature, flow rate, water quality, power, and chemical residuals.
- (7) A description of all relevant standard operating procedures including, but not limited to—
- (i) BWMS start-up and shutdown procedures and times;

(ii) Emergency shutdown and system by-pass procedures;

(iii) Requirements to achieve treatment objectives (e. g., time following initial treatment, critical dosages, residual concentrations, etc);

(iv) Operating, safety, and emergency procedures;

(v) BWMS limitations, precautions, and set points;

(vi) Detailed instructions on operation, calibration and zeroing of each monitoring device used with the BWMS; and

(vii) Personnel requirements for the BWMS, including number and types of personnel needed, labor burden, and operator training or specialty certification requirements.

(8) A description of the preventive and corrective maintenance requirements of the BWMS, including—

(i) Inspection and adjustment procedures;

(ii) Troubleshooting procedures;

(iii) An illustrated list of parts and spare parts;

(iv) A list of recommended spare parts to have during installation and operation of the BWMS;

(v) Use of tools and test equipment in accordance with the maintenance procedures; and

(vi) Point(s) of contact for technical assistance.

(9) A description of the health and safety risks to the personnel associated with the installation, operation, and maintenance of the BWMS including, but not limited to—

(i) The storage, handling, and disposal of any hazardous wastes;

(ii) Any health and safety certification/training requirements for personnel operating the BWMS; and

(iii) All material safety data sheets for hazardous or relevant chemicals used, stored, or generated by or for the system.

(b) If any information in the OMSM changes as a result of approval testing and evaluations, a new OMSM must be submitted.

§ 162.060-40 Requirements for Independent Laboratories (ILs).

(a) For designation by the Coast Guard as an independent laboratory for the evaluation, inspection, and testing

of BWMS, an independent laboratory must demonstrate compliance with 46 CFR 159.010-3, 46 CFR 159.010-5, and 46 CFR 159.010-11 through 159.010-19.

(b) Each request for designation as an independent laboratory authorized under paragraph (a) of this section must be delivered to the Commandant (CG-ENG), Attn: Office of Design and Engineering Systems, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7509, in a written or electronic format.

(c) A list of independent laboratories designated by the Coast Guard under paragraph (b) of this section may be found at <http://cgmix.uscg.mil/>, or may be obtained by contacting the Commandant (CG-ENG), Attn: Office of Design and Engineering Systems, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7509.

[USCG-2001-10486, 77 FR 17311, Mar. 23, 2012, as amended by USCG-2013-0671, 78 FR 60161, Sept. 30, 2013]

§ 162.060-42 Responsibilities for Independent Laboratories (ILs).

(a) Upon receipt of a request from a manufacturer for approval testing of a ballast water management system (BWMS), the independent laboratory will conduct a readiness evaluation and determine the acceptability of the BWMS for testing.

(1) The readiness evaluation will examine the design and construction of the BWMS to determine whether there are any fundamental problems that might constrain the ability of the BWMS to manage ballast water as proposed by the manufacturer or to operate it safely onboard vessels. This evaluation must determine that the BWMS—

(i) Is designed and constructed according to the requirements of § 162.060-20 of this subpart;

(ii) Meets all existing safety and environmental regulatory requirements for all locations and conditions where the system will be operated during the testing and evaluation period; and

(iii) Meets the definition of a complete BWMS, as defined in this subpart,