Joint HELCOM/OSPAR Task Group on Ballast Water Management Convention Exemptions
Ninth Meeting
Gothenburg, Sweden, 13-14 December 2018

Document title	Information on the ongoing Study of Ballast Water Indicative Analysis Devices Testing in Finland
Code	8 - 1
Category	INF
Agenda Item	8 – Any other business
Submission date	27.11.2018
Submitted by	Finland
Reference	

Background

As part of the Experience Building Phase (EBP) of the implementation of the Ballast Water Management Convention (BWMC) this document introduces the ballast water indicative analysis devices testing study, which is ongoing in Finland. The aim of the study is to test different ballast water indicative analysis devices in practice and compare the results to the results from detailed analysis. Thus, the ultimate purpose of this study is to find out best available indicative analysis device for the port State control officers´ use in Finland.

Action required

The Meeting is invited to:

- take note of the information;
- encourage member states to share the information if similar studies have been conducted; and
- take action as appropriate.

Information on ongoing Ballast Water Indicative Analysis Devices Testing Study

Introduction

The general obligations of the Ballast Water Management Convention (BWMC) include control measures that the Parties to the Convention are required to take to ensure that ships entering their ports are in compliance with the Convention. In Finland, the Finnish Transport Safety Agency Trafi is the authority responsible for port State control inspections of ships. The inspection is primarily conducted as a documentary check; however, the authority may carry out ballast water sampling to verify that a ship is in compliance with the Convention.

The sampling consists of an indicative analysis and a detailed analysis. The results indicate whether the ship meets the performance standard given in the BWMC. If the ship fails to meet the standard in indicative analysis, a detailed analysis must be performed in a laboratory. Based on the laboratory results, it is decided whether further measures will be taken.

The purpose of the study commissioned by the Finnish Transport Safety Agency Trafi is to find an indicative analysis device for the use of the Trafi's port State control officers (PSCO). The Marine Research Centre of the Finnish Environment Institute (SYKE) conducts the study for Trafi.

Discussion

This ongoing study is a further study to Literature Review of the Indicative Ballast Water Analysis Methods, which was completed in 2017. The report of the Literature Review was submitted to the International Maritime Organization's (IMO) Marine Environment Protection Committee's (MEPC) 71st session (MEPC 71/4/31) and to the HELCOM Maritime 17 meeting (3-2.INF).

The main aim of the ongoing study is to test those indicative analysis methods, which were found to be most suitable for the use of PSCOs in Finland in Literature Review. The most important assessment criteria for the devices under testing are the reliability and user-friendliness, the time required for obtaining the results as well as the procurement and operating costs of the device. In addition, the study will indicate if the ships' Ballast Water Management Systems will comply with the Regulation D-2 of the BWMC and based on information received from the study, the national process for the ballast water sampling and port State control inspection will also be developed.

The recommended methodologies in Literature Review were PAM (Pulse Amplitude Modulation fluorometry), ATP (adenosine triphosphate) and FRR (fast repetition rate fluorometry). Four different indicative analysis devices, which use above-mentioned methodologies, were borrowed for testing. These devices are LuminUltra's B-QUA ATP testing kit (ATP), Chelsea Technologies Group Ltd's FastBallast (FRR), Microwise's Ballastwise (PAM and camera detection) and BBE Moldaenke's 10cells (PAM).

Ballast water sampling and indicative analyses were conducted in two Finnish flagged ships, which have Ballast Water Management System (BWMS) installed onboard. The first analyzed ship was icebreaker (GT 9333) owned by the Finnish Government, which BWMS uses filtering and UV technology as a treatment method. The second ship was general cargo ship (GT 3405) owned by private ship-owner company, which BWMS uses filtering, electrolysis and ultra-sonic technology. Collected ballast water was also analyzed in detail in laboratory so that the accuracy of the indicative analysis devices could be assessed. The detailed analyses were conducted using FDA staining and epifluorescent microscopy and these analyses were performed only for the 10-50 um organism fraction.

The results of the study will be published in spring 2019 and will be submitted to the HELCOM Maritime 19 meeting and IMO MEPC's 75th session.