



TECHNICAL INSTRUCTIVE

Operational Carbon Intensity

(SEEMP Part III- Ship Operational Carbon Intensity Plan)

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1. Objectives.

- .1 The purpose of this Instructive is to provide guidelines and requirements to carry out the verification and certification of the Part III of the Ship Energy Efficiency Management Plan (**SEEMP Part III-Ship Operational Carbon Intensity Plan**); the verification of the attained annual operational Carbon Intensity Indicator (CII) and determination of the CII rating; the issuance of the Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating; and Company audits related to SEEMP Part III.

2. Application.

- .1 In accordance with 2021 Revised MARPOL Annex VI, Chapter 4, Regulation 26.3, the SEEMP Part III shall apply to ships of 5,000 gross tonnage and above for which the SEEMP Part I is required to be retained on board, and the ship is one of the following ship types defined in MARPOL Annex VI, Regulation 2:
 - .1 Bulk carrier.
 - .2 Combination carrier.
 - .3 Containership.
 - .4 Cruise passenger ship.
 - .5 Gas carrier.
 - .6 General Cargo ship.
 - .7 LNG carrier.
 - .8 Refrigerated cargo carrier.
 - .9 Ro-ro cargo ship.
 - .10 Ro-ro cargo ship (vehicle carrier).
 - .11 Ro-ro passenger ship.
 - .12 Tanker.
- .2 This Instructive will enter into force on **01 November 2022**.

3. Scope.

- .1 This Instructive shall be applied by the authorized Auditors and the Marine Division to carry out the following activities:
 - .1 Verification of the SEEMP Part III.
 - .2 Issuance of the Confirmation of Compliance-SEEMP Part III.
 - .3 Verification of the attained annual operational CII (see note below).
 - .4 Determination of the CII rating (see note below).
 - .5 Issuance of the Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating.
 - .6 Company audits of the SEEMP Part III.

Note: Verification of the attained annual operational CII and determination of the CII rating shall be carried out by VERIFAVIA.

4. Relevant documentation.

- .1 The following documentation is relevant for the control of this Instructive:
 - .1 IMO Resolution MEPC.328(76)- 2021 Revised MARPOL Annex VI.
 - .2 IMO Resolution MEPC.346(78)- 2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP) (revokes MEPC.282(70)).



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- .3 IMO Resolution MEPC.347(78)- Guidelines for the verification and Company audits by the Administration of Part III of the ship energy efficiency management plan (SEEMP).
- .4 IMO Resolution MEPC.348(78)- 2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity (revokes MEPC.292(71)).
- .5 IMO Resolution MEPC.352(78)- 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1) (revokes MEPC.336(76)).
- .6 IMO Resolution MEPC.353(78)- 2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII Reference Lines Guidelines, G2) (revokes MEPC.337(76)).
- .7 IMO Resolution MEPC.338(76)- Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3).
- .8 IMO Resolution MEPC.354(78)- 2022 Guidelines on the operational carbon intensity rating of ships (CII Rating Guidelines, G4) (revokes MEPC.339(76)).
- .9 IMO Resolution MEPC.355(78)- 2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (CII Guidelines, G5).
- .10 ICS Class-Technical Instructive PO02-TI12- Ship Management Plan to improve energy efficiency (SEEMP Part I).
- .11 ICS Class-Technical Instructive PO02-TI13- Data Collection System for fuel oil consumption of ships (SEEMP Part II- Data Collection Plan).

5. Definitions.

- .1 **Carbon Intensity Indicator (CII):** means a performance indicator by which it is possible to measure the carbon intensity of the ship taking into account data listed for reporting in Appendix IX to MARPOL Annex VI. The CII is a measure of how efficiently a ship transports goods or passengers and is given in grams of CO₂ emitted per cargo-carrying capacity and nautical mile.
- .2 **Calendar year:** means the period from 1 January until 31 December inclusive.
- .3 **Fuel oil:** means any fuel delivered to and intended for combustion purposes for propulsion or operation on board a ship, including gas, distillate and residual fuels (Regulation 2.1.14 of MARPOL Annex VI).
- .4 **Ship fuel oil consumption data:** means the data required to be collected on an annual basis and reported as specified in appendix IX to MARPOL Annex VI.
- .5 **Safety Management System:** means a structured and documented system enabling company personnel to implement effectively the Company safety and environmental protection policy, as defined in paragraph 1.1 of International Safety Management Code.
- .6 **Inspection Office for in-service supervision:** means the ICS Class Inspection Office or territorial Surveyor responsible for maintaining permanent contact and effective relationships with the ships under its technical supervision, including, among others, the shipowners, operators and relevant Port State authorities.
- .7 **VERIFAVIA:** VERIFAVIA Shipping is the first and only global independent accredited EU MRV verification body with dual accreditation, and the first IMO DOC verifier for Panama and Belize, among other flag State Administrations. In accordance with paragraph 4.1 of MMC-369, VERIFAVIA is Independent Company authorized by Panama Maritime Authority for data collection. In December 2018, a Cooperation Agreement was signed between VERIFAVIA and ICS Class to carry out some verification activities required by MARPOL Annex VI on ships registered in flag States that authorize ICS Class to perform data collection system services.



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6. General (Regulations 26.3 and 28 of MARPOL Annex VI).

- .1 The verified SEEMP Part III is to be kept on board from 01 January 2023 together with the Confirmation of Compliance- SEEMP Part III. It shall also be noted that SEEMP Part III comes in addition to the SEEMP Part I and SEEMP Part II. SEEMP Part I was establishing a mechanism for a company and a ship to improve the energy efficiency of a ship's operation. SEEMP Part II described the procedures for monitoring fuel oil consumption. SEEMP Part III will be handled as a separate document.
- .2 Regulation 26.3.1 of MARPOL Annex VI specifies that, for bulk carriers, combination carriers, containerships, cruise passenger ships, gas carriers, general Cargo ships, LNG carriers, refrigerated cargo carriers, ro-ro cargo ships, ro-ro cargo ships (vehicle carrier), ro-ro passenger ships and tankers of 5,000 GT and above, on or before 01 January 2023, the SEEMP shall include:
 - .1 A description of the methodology that will be used to calculate the ship's attained annual operational CII required by Regulation 28 of MARPOL Annex VI and the processes that will be used to report this value to the ship's flag Administration.
 - .2 The required annual operational CIIs, as specified in Regulation 28 of MARPOL Annex VI, for the next three years.
 - .3 An implementation plan documenting how the required annual operational CIIs will be achieved during the next three years; and
 - .4 A procedure for self-evaluation and improvement, and to develop corrective actions, as applicable.
- .3 Ships are required to have an assessed SEEMP Part III onboard by 01 January 2023.
- .4 Measurement of the ship's Operational Carbon Intensity Rating, in accordance with the SEEMP Part III, shall commence on 01 January 2023. The attained annual operational carbon intensity rating shall be verified by the flag Administration by 31 March each year, for the preceding calendar year.

Attained annual operational CII.

- .5 After the end of calendar year 2023 and after the end of each following calendar year, each ship of 5,000 gross tonnage and above which falls into one or more of the categories in paragraph 6.2 above, shall calculate the attained annual operational CII over a 12-month period from 01 January to 31 December for the preceding calendar year, using the data collected in accordance with Regulation 27 of MARPOL Annex VI (SEEMP Part II).
- .6 Within three months after the end of each calendar year, the ship shall report to its flag Administration, or any organization duly authorized by it, the attained annual operational CII via electronic communication and using the Standardized Data Reporting Format for the Data Collection System and Operational Carbon Intensity to the Administration set out in Appendix 3 of Resolution MEPC.346(78).
- .7 In the event of any transfer of a ship addressed in Regulations 27.4, 27.5 or 27.6 of MARPOL Annex VI completed after 01 January 2023, a ship shall, after the end of the calendar year in which the transfer takes place, calculate and report the attained annual operational CII for the full 12-month period from 01 January to 31 December in the calendar year during which the transfer took place, in accordance with paragraphs 6.5 and 6.6 above, for verification in accordance with Regulation 6.6 of MARPOL Annex VI, taking into account the 2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity (Resolution MEPC.348(78)).



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Required annual operational CII.

- .8 For each ship of 5,000 gross tonnage and above which falls into one or more of the categories in paragraph 6.2 above, the required annual operational CII shall be determined in accordance with Regulations 28.4 and 28.5 of MARPOL Annex VI.

Operational carbon intensity rating.

- .9 The attained annual operational CII shall be documented and verified against the required annual operational CII to determine operational carbon intensity rating A, B, C, D or E, indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level, either by the flag Administration or by any organization duly authorized by it, taking into account the 2022 Guidelines on the operational carbon intensity rating of ships (CII rating Guidelines, G4) (Resolution MEPC.354(78)). The middle point of rating level C shall be the value equivalent to the required annual operational CII set out in paragraph 6.8 above.

Corrective actions.

- .10 A ship rated as D for three consecutive years or rated as E shall develop a plan of corrective actions to achieve the required annual operational CII.
- .11 The SEEMP Part III shall be reviewed to include the plan of corrective actions accordingly, taking into account the 2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP) (Resolution MEPC.346(78)). The revised SEEMP Part III shall be submitted to the flag Administration or any organization duly authorized by it for verification, preferably together with, but in no case later than 1 month after reporting the attained annual operational CII in accordance with paragraph 6.6 above.
- .12 A ship rated as D for three consecutive years or rated as E shall duly undertake the planned corrective actions in accordance with the revised SEEMP Part III.
- .13 Ships of 5,000 gross tonnage and above that are subject to Regulations 26.3 and 28 of MARPOL Annex VI are strongly encouraged to review Part I of their SEEMP to revise it as needed to reflect the actions taken to achieve the ship's CII requirements.
- .14 The goal setting, as referred to in the last part of planning stage of SEEMP Part I, shall be consistent with the requirements of Regulation 28 of MARPOL Annex VI and shall include the ship's required annual operational CII for the next three years following the updating of the SEEMP.
- .15 Ships subject to Regulation 28 of MARPOL Annex VI, in accordance with Section 5 of 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1) (MEPC.352(78)), may consider **voluntarily** using one or more of the trial CII (EEPI, cbDIST, cDIST or EEOI), where applicable, for the purpose of providing supporting data for decision-making to support the review clause set out in Regulation 28.11 of MARPOL Annex VI. A standardized data reporting format for the parameters to calculate the trial carbon intensity indicators on voluntary basis is presented in Appendix 4 of Resolution MEPC.346(78)- 2022 Guidelines for the Development of a Ship Energy Efficiency Management Plan (SEEMP). A description of the methodology that shall be used to calculate the trial CII shall be included in the SEEMP.
- .16 SEEMP Part III shall be updated in case of voluntary modifications or necessary corrective actions are involved (every three years).
- .17 It shall be ensured that, for each ship to which Regulation 28 of MARPOL Annex VI applies, the SEEMP complies with Regulation 26.3 of this Annex. This shall be done prior to calculating the operational CII and determining the operational carbon intensity rating CII under aforementioned Regulation 28. Confirmation of Compliance-SEEMP Part III shall be provided to and retained on board the ship.



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7. Framework and structure of the SEEMP Part III.

- .1 The SEEMP Part III (Ship Operational Carbon Intensity Plan) shall be prepared in accordance with Resolution MEPC.346(78)- 2022 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP). Sections 9 to 15 of these Guidelines provide guidance for ships to which Regulation 26.3 of MARPOL Annex VI applies for the following purposes:
 - .1 to assist them in developing SEEMP Part III, including guidance on developing a ship-specific method to collect necessary data;
 - .2 to describe the methodology that will be used to calculate the ship's attained annual operational CII value and report this to the ship's flag Administration;
 - .3 to determine the ship's required annual operational CII for the next three years;
 - .4 to develop and apply an implementation plan documenting how the required annual operational CII will be achieved during the next three years;
 - .5 to define a procedure for self-evaluation and improvement; and
 - .6 to develop corrective actions, as applicable.
- .2 Appendix 2bis of Resolution MEPC.346(78) provides a sample form of the SEEMP Part III.

8. Attained annual operational CII calculation methodology; data collection plan and data quality.

- .1 From 01 January 2024 (and after the end of each following calendar year), each applicable ship shall calculate the attained annual operational CII over a 12-month period from 01 January to 31 December for the preceding calendar year (starting with the 2023 data), using the fuel oil consumption data collected in accordance with SEEMP Part II.
- .2 The SEEMP Part III shall provide detailed information on how the ship's attained annual operational CII shall be calculated. The attained annual operational CII shall be calculated taking into account the instruments listed below, as the basis for those calculations:
 - .1 Resolution MEPC.352(78)- 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1).
 - .2 Resolution MEPC.355(78)- 2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (CII guidelines, G5).
- .3 In its most simple form, the attained annual operational CII of individual ships is calculated as the ratio of the total mass of CO₂ emitted to the total transport work undertaken in a given calendar year.
- .4 Regulation 28 of MARPOL Annex VI states that the attained annual operational CII shall be calculated, using the data collected in accordance with Regulation 27 of MARPOL Annex VI (Fuel Oil Data Collection System according to SEEMP Part II).
- .5 In adopting Resolution MEPC.352(78) on the 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII guidelines, G1), proposals for CII corrections factors for certain ships types, operational profiles and/or voyages were considered with a view to enhancing, as appropriate, the CII Guidelines, G1.
- .6 In accordance with 2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (CII guidelines, G5), for all ships to which regulation 28 of MARPOL Annex VI applies, the operational carbon intensity formula defined in Section 4 of these guidelines shall be applied when using voyage adjustments or correction factors. Correction factors are applicable to tankers, gas carriers, LNG carriers and refrigerated containers.



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- .7 Where correction factors or voyage adjustments for CII calculations do apply, the following documentation shall be included in the SEEMP Part III:
 - .1 Calculation methodology for annual operational CII with correction factors or voyage adjustments.
 - .2 A brief description of the methodology adopted on how the fuel consumption and distance travelled (as applicable) are ascertained for the specific voyage or period. Since this methodology for calculating the fuel consumed and distance travelled is not specifically addressed in the existing SEEMP Part II, hence it is required to be detailed in the SEEMP Part III.
- .8 In describing the calculation methodology, SEEMP Part III shall include a detailed description of the data required for the calculation of the attained annual operational CII. The data collection shall follow the relevant methodology and requirements on the Fuel Oil Data Collection System pursuant to Regulation 27 of MARPOL Annex VI (Refer to SEEMP Part II).
- .9 In case of transfer of the ship from one company to another according to Regulation 27.5 or 27.6 of MARPOL Annex VI, all relevant data necessary for the calculation of the attained annual operational CII shall be submitted by the former Company to the receiving Company within one month after the date of transfer. The data shall have been verified according to Regulation 6.7 of MARPOL Annex VI before they are transferred to the receiving Company. The format of the transfer shall be consistent with Appendix 3 of Resolution MEPC.346(78) and such that the receiving Company can use it in the calculations of the attained annual operational CII for the whole year, in which the transfer takes place.
- .10 In case the former Company does not transfer the required data, the flag Administration may make relevant data submitted to the IMO Fuel Oil Consumption Database available to the receiving Company. In case of a transfer of both Company and flag Administration concurrently, the incoming Administration may request the IMO for access to the data according to Regulation 27.11 of MARPOL Annex VI. If no such data is available, the attained annual operational CII can be calculated and verified using the available data covering a period of the preceding calendar year as long as practically possible.
- .11 In case of transfer of a ship from one flag Administration to another according to Regulation 27.4 of MARPOL Annex VI the data needed for calculating the annual attained CII is already in possession by the relevant Company and no further exchange of data is needed.

9. Required annual operational CII for next three years.

- .1 The SEEMP Part III shall describe the required annual operational CII values for the ship for each of the next three years. The required annual operational CII shall be calculated in accordance with Regulation 28 of MARPOL Annex VI taking into account the instruments listed below, as the basis for those calculations:
 - .1 Resolution MEPC.353(78)- 2022 Guidelines on the reference lines for use with operational carbon intensity indicators (CII Reference Lines Guidelines, G2).

These Guidelines provide the methods to calculate the reference lines for use with operational CIIs, and the ship type specific carbon intensity reference lines as referred to in Regulation 28 of MARPOL Annex VI.

An operational CII reference line (CII_R) is defined as a curve representing the median attained operational carbon intensity performance, as a function of capacity, of a defined group of ships in year of 2019.



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- .2 Resolution MEPC.338(76)- Guidelines on the operational carbon intensity reduction factors relative to reference lines (CII reduction factors guidelines, G3).
These Guidelines provide the methods to determine the annual operational carbon intensity reduction factors and their concrete values from year 2023 to 2030, as referred to in Regulation 28 of MARPOL Annex VI.
The annual operational carbon intensity factor, generally denoted as "Z" in Regulation 28 of MARPOL Annex VI, is a positive value, stipulating the percentage points of the required annual operational CII of a ship for a given year lower than the reference value.

10. Three-year implementation plan.

- .1 The purpose of this Section is for the Company to briefly describe the measures how the ship aims to maintain the required annual operational CII over the next three-year period.
- .2 The three-year implementation plan shall describe the measures the ship plans to take to continue to achieve the required annual operational CII over the next three-year period. The exhaustive list of energy efficiency measures provided below, in accordance with Section 5 of Resolution MEPC.346(78)- 2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP), is for guidance only and the Company shall list only those measures which are appropriate to its operations together with any other measures not listed below.
- .1 Fuel-efficient operations.
- a) Improved voyage planning.
 - b) Weather routing.
 - c) Just in time.
 - d) Speed optimization.
 - e) Optimized shaft power.
- .2 Optimized ship handling.
- a) Optimum trim.
 - b) Optimum ballast.
 - c) Optimum propeller and propeller inflow considerations.
 - d) Optimum use of rudder and heading control systems (autopilots).
 - e) Hull maintenance.
 - f) Propulsion system.
 - g) Propulsion system maintenance.
- .3 Waste heat recovery.
- .4 Improved fleet management.
- .5 Improved cargo handling.
- .6 Energy management.
- .7 Fuel type.
- .8 Other measures.
- a) Development of computer software for the calculation of current fuel consumption, for the establishment of an emissions "footprint," to optimize operations.
 - b) Using renewable energy sources, such as solar (or photovoltaic) cell technology.
 - c) Using of onshore power, if available.
 - d) Wind assisted propulsion may be considered.
 - e) Efforts could be made to source fuel of improved quality in order to minimize the amount of fuel required to provide a given power output.



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- .3 The three-year implementation plan is ship specific.
- .4 In accordance with paragraph 10.2 above, the three-year implementation plan shall include a list of measures that improve the energy efficiency and reduce the carbon intensity of the ship, with time and method of implementation, necessary for achieving the required operational CII. For each of the energy efficiency measures selected, the three-year implementation plan (Company) shall provide:
 - .1 A description of how and when the listed measures are implemented.
 - .2 The list of implementation actions to achieve the listed measures. The list of implementation actions shall be provided that shall follow the SMART principle (Specific, Measurable, Attainable, Realistic and Time-constrained).
 - .3 It's impact on the CII individually and collectively (taking into consideration the combined effect of the measures).
 - .4 The company personnel responsible for the implementation, monitoring and recording performance throughout the year.
 - .5 Identify possible impediments to the effectiveness of the proposed measures including possible contingency measures that can be adopted to overcome these impediments.
 - .6 Based on the measures adopted and its impact on the CII, ascertain what the targeted operational annual CII and corresponding rating.
- .5 The Company shall monitor and adjust the three-year implementation plan, when necessary, together with the data to be monitored clearly identified.

11. Process for self-evaluation and improvement.

- .1 The process for self-evaluation and improvement of SEEMP Part III is in addition to the self-evaluation and improvement of the management cycle of the SEEMP Part I.
- .2 The purpose of self-evaluation is to evaluate the effectiveness of the planned measures and their implementation, to deepen the understanding on the overall characteristics of the ship's operation such as what types of measures can function effectively, and how or why, to comprehend the trend of the efficiency improvement of that ship, to understand trends in the ship's utilization in terms of cargo carried and areas of operation, and to develop an improved action plan for the next cycle. This evaluation shall produce meaningful feedback based on experience in the previous period, to enhance performance in the next period.
- .3 Procedures for self-evaluation of the ship's energy usage and carbon intensity, shall be developed and included in this section of the SEEMP Part III. Self-evaluation shall be carried out periodically based on data collected through monitoring. It is recommended to identify the cause-and-effect of the ship's performance in the evaluated period to identify measures for improving performance during the next period.
- .4 The process of self-evaluation and improvement could consist of the following elements:
 - .1 Regular internal shipboard and Company audits to verify implementation and the effectiveness of the system;
 - .2 Improvement i.e., implementing preventive or modifying measures (responsible personnel within the company shall evaluate such audit reports and implement corrective actions including preventive or modifying measures); and
 - .3 Periodical review of the SEEMP Part III and associated documents, to update the SEEMP in a manner which minimizes any administrative and unnecessary burdens on company's personnel and ships' staff.



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- .5 For each of the topics below, the Company is to provide a brief description based on the energy efficiency measures adopted to Operational Carbon Intensity Indicators:
 - .1 Criteria for evaluation including elements to evaluate, such as quality of monitoring, record keeping, effectiveness of implemented measures (including cause and effect) and achievement of the goal, for each of the implemented energy efficiency measures;
 - .2 The evaluation of the effectiveness of the different measures implemented, in terms of energy efficiency and carbon intensity;
 - .3 Which measures contribute the most and how much, what measures do not contribute and are therefore not efficient, which ship and/or Company-specific elements adversely affecting the CII and how these could be improved;
 - .4 Timelines for starting the review process ahead of the end of the compliance period and for implementation of new measures in the subsequent year;
 - .5 Measures identified to address deficiencies and discrepancies including correction of data gaps and system weaknesses, new measures to improve implementation (e.g., Training) as well as new carbon intensity improvement measures as needed;
 - .6 Where relevant, actions that will be taken to bring the ship into better CII ratings including estimated quantification of the additional expected reduction in carbon intensity;
 - .7 Where relevant, identification of critical factors that contributed to missing the CII target.

12. Review and update of the SEEMP Part III by the Company.

- .1 Regulation 26.1 of MARPOL Annex VI provides: 'Each ship shall keep on board a ship specific Ship Energy Efficiency Management Plan (SEEMP). This may form part of the ship's Safety Management System. The SEEMP shall be developed and reviewed, taking into account Resolution MEPC.346(78)- 2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP). Regulation 26.3.2 of MARPOL Annex VI provides: For ships rated as D for 3 consecutive years or rated as E, in accordance with Regulation 28 of this Annex, the SEEMP Part III shall be reviewed in accordance with regulation 28.8 of this Annex to include a plan of corrective actions to achieve the required annual operational CII.
- .2 The company shall ensure that the SEEMP is reviewed and updated in case of voluntary modifications or necessary corrective actions are involved.
- .3 The SEEMP Part III shall include a log for when it has been reviewed and updated and identify which parts have been changed.

13. Carbon intensity rating and plan of corrective actions.

- .1 The attained annual operational CII shall be documented and verified against the required annual operational CII to determine operational carbon intensity rating A, B, C, D or E, indicating a major superior, minor superior, moderate, minor inferior, or inferior performance level taking into account the 2022 Guidelines on the operational carbon intensity rating of ships (CII rating Guidelines, G4) (Resolution MEPC.354(78)). These Guidelines provide the methods to assign operational energy efficiency performance ratings to ships, as referred to in regulation 28 of MARPOL Annex VI.
- .2 An operational energy efficiency performance rating shall be annually assigned to each ship to which regulation 28 of MARPOL Annex VI applies, in a transparent and robust manner, based on the deviation of the attained annual operational CII of a ship from the



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required value. The middle point of rating level C shall be the value equivalent to the required annual operational CII.

- .3 A plan of corrective actions is not required to be included in the SEEMP Part III unless a ship has been rated D for three consecutive years or E for one year.
- .4 For a ship that is required to develop a plan of corrective actions in accordance with Regulation 28.7 of MARPOL Annex VI, a revised SEEMP Part III including the corrective actions for CII reduction shall be submitted to the flag Administration or any organization duly authorized by it for verification in accordance Regulation 28.8 of MARPOL Annex VI. The revised SEEMP Part III shall be submitted together with, but in no case later than 1 month after reporting the attained annual operational CII in accordance with paragraph 2 of Regulation 28 (within three months after the end of each calendar year).
- .5 Regulation 28.9 of MARPOL Annex VI further provides that "A ship rated as D for three consecutive years or rated as E shall duly undertake the planned corrective actions in accordance with the revised SEEMP Part III.

Developing the plan of corrective actions.

- .6 The purpose of the plan of corrective actions is to set out what actions a ship that was rated D for three consecutive years or E for one year shall take to achieve at least a C rating for the calendar year following the adoption of the plan of corrective actions and ultimately the required annual operational CII.
- .7 The plan of corrective actions is ship specific.
- .8 Many of the approaches described in paragraph 10.2 above, in accordance with Section 5 of Resolution MEPC.346(78), or any other suitable measure may be applied to a ship to improve its fuel efficiency and thus its CII rating.
- .9 The plan for corrective action shall describe the actions that the ship plans to take, the timeline in which those actions will be applied, and the expected impact their application will have on the ship's CII rating. It shall be demonstrated how the corrective actions will contribute to achieving the required annual operational CII, so as to ascertain the effectiveness of the corrective actions. Experience gained from previously taken corrective actions and their degree of effectiveness shall be taken into account when selecting the proper corrective actions.
- .10 The plan of corrective actions should be SMART (Specific, Measurable, Achievable, Realistic, and Time bound). It shall include:
 - .1 Analysis of the cause for the inferior CII rating;
 - .2 Analysis of the performance of implemented measures;
 - .3 List of additional measures and revised measures to be added to the implementation plan with time and method of implementation, necessary for achieving the required operational CII.
 - .4 Designation of a company person to be responsible for the added and revised measures in the implementation plan, monitoring and recording performance throughout and reviewing of the effectiveness of the corrective actions; and
 - .5 Identification of possible impediments to the effectiveness of the measures for improving the energy efficiency and reducing the carbon intensity of the ship, including possible additional contingency measures put in place to overcome and how these impediments will be overcome.
- .11 The implementation of the plan of corrective actions shall be monitored and adjusted when necessary. Additional measures shall be taken to strengthen corrective actions in case of insufficient intermediate results.



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- .12 The company shall ensure that it is in a position to perform the actions set out in the plan of corrective actions and confirm that it is able to do so when submitting its updated SEEMP Part III.

14. Verification of the SEEMP Part III.

- .1 The verification of the SEEMP Part III required by Regulation 26.3.3 of MARPOL Annex VI, shall be carried out in accordance with the Guidelines for the verification and company audits by the Administration of Part III of the Ship Energy Efficiency Management Plan (SEEMP) adopted by Resolution MEPC. 347(78).
- .2 The verification of the SEEMP Part III shall confirm that this Plan includes the relevant elements in accordance with regulation 26.3 of MARPOL Annex VI, as applicable, as well as the reliability of the SEEMP.
- .3 The verification of the SEEMP Part III shall normally involve the following:
 - .1 Initial verification;
 - .2 Periodical verifications; and
 - .3 Additional verifications.
- .4 The initial, periodical and additional verifications of the SEEMP Part III shall be carried out by the technical staff of the Marine Division duly authorized for this purpose.
- .5 The initial, periodical and additional verifications of the SEEMP Part III shall be carried out using the Checklist for Verification SEEMP Part III. These verifications shall be based on documentary evidence.
- .6 All non-conformities found during the verification of the SEEMP Part III shall be totally rectified. All corrective actions taken to rectify the non-conformities pointed out shall be submitted to the Marine Division to be evaluated and accepted.
- .7 During the verification of the SEEMP Part III a visit on board the ship is not required.

Documentation.

- .8 To facilitate the verification of the SEEMP Part III, and by electronic means, the shipowner shall provide the Marine Division with the following documentation:
 - .1 SEEMP Part II.
 - .2 SEEMP Part III.
 - .3 Registry Certificate (Patent of Navigation).
 - .4 SMC for ship.
 - .5 DOC for Company.
 - .6 Documents (IEE certificate or International Tonnage Certificate) evidencing the capacity parameter of the ship in the metric relevant for the calculation of its operational carbon intensity (deadweight or gross tonnage).
 - .7 Copy of any procedures mentioned in the SEEMP Part III.
 - .8 Statements of Compliance for previous two calendar years where applicable.
 - .9 Other documentation, as deemed necessary by the Marine Division during the verification process.
- .9 The documentation listed in paragraph 14.8 above can be provided by the shipowner to the Marine Division directly or through its Inspection Office for in-service supervision. For ships that are under the supervision of ICS China, the documentation shall be provided through ICS China.



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Initial verification (Regulation 5.4.6 of MARPOL Annex VI).

- .10 The initial verification shall be carried out to confirm that the SEEMP Part III complies with Regulation 26.3.1 of MARPOL Annex VI. In accordance with regulation 5.4.6 of MARPOL Annex VI, this process shall be done prior to 01 January 2023 for existing ships or before a new ship is put in service.
- .11 On satisfactory assessment of the SEEMP Part III, the Marine Division shall issue the Confirmation of Compliance in accordance with Section 15 below.

Periodical verification (Regulation 5.4.6 of MARPOL Annex VI).

- .12 If any of the elements in Regulation 26.3.1 of MARPOL Annex VI is updated, and however every three years, the Marine Division shall perform a periodical verification to confirm that the SEEMP Part III complies with the aforementioned regulation 26.3.1 in accordance with regulation 5.4.6 of MARPOL Annex VI.
- .13 On satisfactory assessment of the SEEMP Part III, the Marine Division shall issue the Confirmation of Compliance in accordance with Section 15 below.

Additional verification (Regulation 6.8 of MARPOL Annex VI).

- .14 The Marine Division shall, in the case of a ship rated as D for three consecutive years or a ship rated as E, perform an additional verification to ensure that a plan of corrective actions has been established in accordance with Regulations 28.7 and 28.8 of MARPOL Annex VI.
- .15 On satisfactory assessment of the SEEMP Part III, the Marine Division shall issue the Confirmation of Compliance in accordance with Section 15 and paragraph 15.2 below.

15. Issuance and validity of the Confirmation of Compliance - SEEMP Part III.

- .1 Upon satisfactory initial, periodical and additional verifications of the SEEMP Part III, without outstanding non-conformities, the Marine Division shall issue the Confirmation of Compliance-SEEMP Part III (hereinafter, the Confirmation of Compliance). The Confirmation of Compliance shall be provided to and retained on board the ship.
- .2 Notwithstanding paragraph 15.1 above, a ship rated as D for three consecutive years or rated as E in accordance with Regulation 28 of MARPOL Annex VI shall not be issued a Statement of Compliance unless a plan of corrective actions is duly developed and reflected in the SEEMP Part III and verified by the Marine Division in accordance with Regulations 28.7 and 28.8 of this Annex.
- .3 The Confirmation of Compliance shall be issued in accordance with the format set out in the Annex to Resolution MEPC. 347(78).
- .4 The Confirmation of Compliance ceases to be valid, when the related SEEMP Part III loses its validity.
- .5 A SEEMP Part III loses its validity in the following cases:
 - .1 Transfer of a ship from one flag Administration to another (change of flag).
 - .2 Transfer of a ship from one Company to another (change of Company).
 - .3 When any of the elements in Regulation 26.3.1 of MARPOL Annex VI is updated.
 - .4 In the event that the ship is rated as D for three consecutive years or as E for one year, when a plan of corrective actions is required to be included in the existing SEEMP Part III, and the updated SEEMP Part III shall be verified in accordance with paragraph 14.14 above (additional verification).

Note: In addition to above, it shall be noted that, in accordance with paragraph 14.12 above, the SEEMP Part III shall be verified by the Marine Division every three years (periodical verification).



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- .6 The validity of the existing SEEMP Part III shall be checked by the attending Surveyor during the annual, intermediate and renewal surveys of the International Air Pollution Prevention Certificate.
- .7 When a SEEMP Part III loses its validity, the new SEEMP Part III shall be prepared, verified and certified in accordance with the provisions of Sections 7 to 15 above.
- .8 When changes any information recorded in Section 2 of an existing SEEMP Part III, except Company and the ship's flag, the SEEMP Part III does not lose its validity. However, the referred Section 2 shall be updated accordingly.
- .9 When any information recorded in the ship particulars of an existing Confirmation of Compliance changes, except the port of registry, that confirmation of compliance shall be reissued accordingly. In this case, the shipowner shall provide the Marine Division with the updated Section 2 of SEEMP Part III for review.

16. Verification of the attained annual operational CII and determination of the CII rating.

- .1 The verification of the attained annual operational CII and determination of the CII rating shall be carried out taking into account the 2022 Guidelines for Administration verification of ship fuel oil consumption data and operational carbon intensity, adopted by Resolution MEPC.348(78).
- .2 The verification of the attained annual operational CII and determination of the CII rating of any ship that has been or intends to be certified by ICS Class under the provisions of Chapter 4 of MARPOL Annex VI, regardless its flag State, shall be carried out by VERIFAVIA.
- .3 The service request and the necessary coordination with VERIFAVIA for ships that are under the supervision of ICS China, shall be carried out by the shipowner through ICS China.
- .4 The service request and the necessary coordination with VERIFAVIA for ships that are not under the supervision of ICS China, shall be carried out by the shipowner directly with VERIFAVIA.
- .5 To facilitate the verification of the attained annual operational CII, and by electronic means, the shipowner shall provide VERIFAVIA with the following documentation:
 - .1 a copy of the verified SEEMP Part III.
 - .2 documents (IEE certificate, Stability Booklet or International Tonnage Certificate) evidencing the capacity parameter of the ship in the metric relevant for the calculation of its operational carbon intensity (deadweight or gross tonnage).
 - .3 aggregated data of fuel oil consumption and distance travelled covering the entire calendar year to calculate the attained annual operational CII (AER or cgDIST) (See sample form of data summary set out in Appendix 2 of Resolution MEPC.348(78)).
 - .4 the aggregated values of the parameters and associated calculation methods to determine the annual metric value of the trial CII on voluntary basis, if any (See sample form of data summary set out in Appendix 2- add1 of Resolution MEPC.348(78)).
 - .5 supported by documentary evidence, the correction factors and voyage adjustments (Refer to the 2022 Interim guidelines on correction factors and voyage adjustments for CII calculations (CII Guidelines, G5), adopted by Resolution MEPC.355(78)) applied in the attained annual operational CII calculation, if any, during the reporting period (See sample form of data summary set out in Appendix 2 of Resolution MEPC.348(78)).



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- .6 statements of compliance for previous two calendar years where applicable.
- .7 in addition to above, any documentation that VERIFAVIA deems relevant to perform a comprehensive review of the attained annual operational CII and determination of the CII rating.
- .6 The attained annual operational CII shall be verified using the data over a 12-month period from 01 January to 31 December for the preceding calendar year. In cases that the calculation of the attained annual operational CII is not possible due to the unavailability of some data, such as where a new ship is delivered after 01 January in the preceding year, the attained annual operational CII shall be verified using the available data covering the corresponding period of the preceding calendar year.
- .7 In case of a ship with multiple load line certificates or with a load line certificate containing multiple load lines, the highest deadweight value shall be used to calculate and verify the required and attained annual operational CII.
- .8 For a ship which permanently changes its deadweight (DWT) and/or its gross tonnage (GT) during the year, which the SEEMP or a corrective action plan identifies as being undertaken to improve the ship's operational carbon intensity performance:
 - .1 the required annual operational CII shall always be calculated and verified using the original DWT or GT value before conversion, however the attained CII which is used to assess compliance shall be calculated and verified using the new DWT or GT value after conversion; and
 - .2 for the year when the conversion is made, the attained annual operational CII shall be calculated and verified for the entire calendar year on the average DWT or GT value weighted on distance travelled before and after conversion.
- .9 Except for those specified in paragraph 16.8 above, for a ship which is regarded by the flag Administration as a newly constructed ship as per Regulation 5.4.3 of MARPOL Annex VI due to major conversion, including extensive changes of carrying capacity and/or ship type during the year, the required and attained annual operational CII shall be calculated and verified as per a newly constructed ship for the period after conversion. For the year when the major conversion is made, the data for partial year before conversion shall still be reported for verification but will not be included in the calculation and verification of the attained annual operational CII.
- .10 For a ship which has undergone a transfer addressed in Regulations 27.4, 27.5 or 27.6 of MARPOL Annex VI, the losing flag Administration neither needs to verify the attained annual operational CII nor to determine the annual CII rating of the ship for partial year. The attained annual operational CII shall be verified by the receiving flag Administration using the data over an entire calendar year. In such cases, the aggregated data necessary to calculate the attained annual operational CII before transfer, which shall have already been verified by the losing flag Administration, can be directly used by the receiving flag Administration without further verification (See sample form set out in appendix 3 and appendix 3 - add1 of Resolution MEPC.348(78)).
- .11 VERIFAVIA shall determine the operational carbon intensity rating for the ship, taking into account the 2022 Guidelines on the operational carbon intensity rating of ships (CII Rating Guidelines, G4) adopted by Resolution MEPC.354(78). The attained and required annual operational CII, as well as the rating boundaries, shall be all given with three decimal places. If the attained annual operational CII happens to land on a rating boundary, the ship shall be rated as the better of the two ratings.



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- .12 The trial CII (e.g., EEPI, cbDIST, cDIST or EEOI), in accordance with the 2022 Guidelines on operational carbon intensity indicators and the calculation methods (CII Guidelines, G1) adopted by Resolution MEPC.352(78), if voluntarily calculated and reported, shall be verified by VERIFAVIA following the same procedure as for the attained annual operational CII (AER or cgDIST). VERIFAVIA needs not to assign a rating to a ship based on trial CII.
- .13 Shall any material discrepancy be identified by VERIFAVIA in the reported data and/or the calculation of required/attained annual operational CII, it shall be communicated to the Company on a timely basis for clarification or correction. A discrepancy is considered material if the discrepancy or aggregation of discrepancies could influence the reported total by more than $\pm 5\%$.

17. Issuance of the Statement of Compliance- Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating.

17.1 For Panama- flagged ships.

- .1 In accordance with Regulation 6.6 of MARPOL Annex VI, upon receipt of reported data pursuant to Regulation 27 of MARPOL Annex VI and attained annual operational CII pursuant to Regulation 28 of MARPOL Annex VI and satisfactory completion of the verification, the Statement of Compliance- Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating shall be issued by the Panama Maritime Authority.
- .2 Taking into account that, in accordance with MMC-369, VERIFAVIA is a Recognized Organization authorized by the Panama Maritime Authority to issue the certificates required by Chapter IV of MARPOL Annex VI, the Statement of Compliance- Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating will be issued by this flag Administration in coordination with VERIFAVIA.

17.2 For ships not flagged in Panama.

- .1 In accordance with Regulation 6.6 of MARPOL Annex VI, upon receipt of reported data pursuant to Regulation 27 of MARPOL Annex VI and attained annual operational CII pursuant to Regulation 28 of MARPOL Annex VI and satisfactory completion of the verification, the Statement of Compliance- Fuel Oil Consumption Reporting and Operational Carbon Intensity Rating (hereinafter, the Statement of Compliance) shall be issued by the Marine Division.
- .2 The Statement of Compliance for ships that are under the supervision of ICS China, shall be issued by the Marine Division in coordination with ICS China.
- .3 The Statement of Compliance for ships that are not under the supervision of ICS China, shall be issued by the Marine Division in coordination with the shipowner directly or through its Inspection Office for in service-supervision.
- .4 The Statement of Compliance shall be issued in accordance with the format set out in Appendix X to MARPOL Annex VI.
- .5 The Statement of Compliance shall be issued no later than five months from the beginning of the calendar year.
- .6 The Statement of Compliance shall be issued by the Marine Division based on the following documentation delivered by VERIFAVIA:



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- .1 Recommendation to ICS Class confirming that the data has been collected and reported in accordance with Regulation 27 of MARPOL Annex VI.
- .2 Recommendation to ICS Class confirming that the attained annual operational CII has been calculated in accordance with Regulation 28 of MARPOL Annex VI. This recommendation shall include the operational carbon intensity rating of the ship.
- .3 Information to be submitted to the IMO Ship Fuel Oil Consumption Database in accordance with the format set out in Appendix IX to MARPOL Annex VI.
- .7 The documentation delivered by VERIFAVIA in accordance with paragraph 17.2.6 above, for ships that are under the supervision of ICS China, shall be provided to the Marine Division by ICS China.
- .8 The documentation delivered by VERIFAVIA in accordance with paragraph 17.2.6 above, for ships that are not under the supervision of ICS China, shall be provided to the Marine Division by the shipowner directly or through its Inspection Office for in service-supervision.
- .9 Notwithstanding paragraph 17.2.1 above, the Marine Division shall consider whether a corrective action plan is required according to Regulation 6.8 of MARPOL Annex VI. In the case of a corrective actions plan being required but not submitted together with the attained annual operational CII, the Marine Division shall inform the Company in a timely manner that a revised SEEMP Part III including a plan of corrective actions, shall be submitted for verification no later than one month after reporting the attained annual operational CII. The Statement of Compliance shall not be issued in such a case unless a corrective action plan is duly developed and reflected in the SEEMP Part III and verified by the Marine Division, taking into account the Guidelines for the verification and company audits by the Administration of Part III of the Ship Energy Efficiency Management Plan (SEEMP) adopted by Resolution MEPC. 347(78).
- .10 Shall any material discrepancy be identified in the reported data and/or the calculation of required/attained annual operational CII, it shall be communicated to the Company on a timely basis for clarification or correction. A discrepancy is considered material if the discrepancy or aggregation of discrepancies could influence the reported total by more than $\pm 5\%$. The Statement of Compliance shall not be issued in such a case unless the material discrepancy is clarified or corrected.

18. Duration and validity of a Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating.

- .1 The Statement of Compliance issued upon receipt of reported data pursuant to Regulation 27 of MARPOL Annex VI and attained annual operational CII pursuant to Regulation 28 of MARPOL Annex VI and satisfactory completion of the verification, shall be valid for the calendar year in which it is issued and for the first five months of the following calendar year.
- .2 The Statement of Compliance issued upon receipt of reported data pursuant to Regulations 27.4, 27.5 or 27.6 of MARPOL Annex VI and attained annual operational CII pursuant to Regulation 28 of MARPOL Annex VI and satisfactory completion of the verification, shall be valid for the calendar year in which it is issued, for the following calendar year, and for the first five months of the subsequent calendar year.
- .3 All Statements of Compliance shall be kept on board for at least five years.



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19. Company audits of the SEEMP Part III.

- .1 The Company audits in accordance with Regulation 26.3.3 of MARPOL Annex VI, shall be performed by the authorized Auditors in accordance with the Guidelines for the verification and company audits by the Administration of Part III of the Ship Energy Efficiency Management Plan (SEEMP) adopted by Resolution MEPC. 347(78).
- .2 The Company is responsible for:
 - .1 informing relevant personnel and those undertaking the delegated SEEMP tasks about the content of the SEEMP;
 - .2 appointing responsible members of staff to accompany the verifier; and
 - .3 providing access and evidential materials as requested by the verifier.
- .3 The company audits shall be based on documentary evidence.
- .4 The Company audits shall include:
 - .1 Additional Company audit.
 - .2 Additional shipboard verification.
 - .3 Periodical Company audits.
 - .4 Periodical shipboard verifications.
- .5 The additional Company audit and the additional shipboard verification shall be performed six months after the issuance of the Statement of Compliance related to fuel oil consumption reporting and operational carbon intensity rating at the latest.
- .6 The additional Company audit and the additional shipboard verification shall be carried out with the following purposes:
 - .1 verify the method of calculations of the CII and that there is a proper description of the method to report ship data to the flag Administration;
 - .2 assess the effectiveness (of the combination) of measures, so that when implemented the ship will with reasonable assurance achieve the required annual operational CII, including the goal as set in accordance with paragraph 4.1.7 and 9.7 (the goal setting of SEEMP Part I shall be consistent with the requirements of Regulation 28 of MARPOL Annex VI and shall include the ship's required annual operational CII for the next three years following the SEEMP Part III) of the 2022 Guidelines for the development of a ship energy efficiency management plan (SEEMP) adopted by Resolution MEPC.346(78); and
 - .3 confirm the robustness of the three-year implementation plan and, where applicable, the plan of corrective actions, including whether realistic timelines for implementation of actions have been included.
- .7 The additional Company audit and the additional shipboard verification shall be carried out using the Checklist for additional Company audit and shipboard verification SEEMP Part III.
- .8 The periodical Company audits shall be performed annually in conjunction with the initial, annual and renewal verification of the Document of Compliance, as applicable, in accordance with guidelines on implementation of the ISM Code referred to in Chapter 15 of the ISM Code.
- .9 The periodical shipboard verifications shall be performed in conjunction with the initial, intermediate and renewal verification of the Safety Management Certificate, as applicable, in accordance with guidelines on implementation of the ISM Code referred to in Chapter 15 of the ISM Code.



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- .10 The periodical Company audits and the periodical shipboard verifications shall be carried out with the following purposes:
 - .1 verify the SEEMP Part III for which the Confirmation of Compliance has previously been issued complies with regulation 26.3.1, and in the case of noncompliance require remedial action;
 - .2 confirm that the ship is being operated in accordance with the SEEMP Part III, regardless of its rating;
 - .3 verify the progress made in the (corrective) actions to be taken in the execution of the three-year implementation plan and the plan of corrective actions;
 - .4 verify self-assessment and improvement of actions taken; and
 - .5 verify the assignment of responsibilities related to the implementation and monitoring of measures.
- .11 The periodical Company audits and the periodical shipboard verifications shall be carried out using the Checklist for periodical Company audits and shipboard verifications SEEMP Part III.

20. Applicable Forms.

- .1 SEEMP Part III Checklist for verification (2022/08).
- .2 COC-SEEMP Part III-FT (2022/08).
- .3 SOC-FOCR/OCIR-FT (2022/08).
- .4 SEEMP Part III Additional Company audit and shipboard verification (2022/08).
- .5 SEEMP Part III Periodical Company audit and shipboard verification (2022/08).

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