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*CANADA SHIPPING ACT 2001 (CSA 2001)*

REGULATORY REFORM PROJECT

PUBLIC CONSULTATION

***VESSEL POLLUTION AND  
DANGEROUS CHEMICALS  
REGULATIONS***

***Phase 2***

CANADIAN MARINE ADVISORY COUNCIL (CMAC)

INFORMATION PAPER

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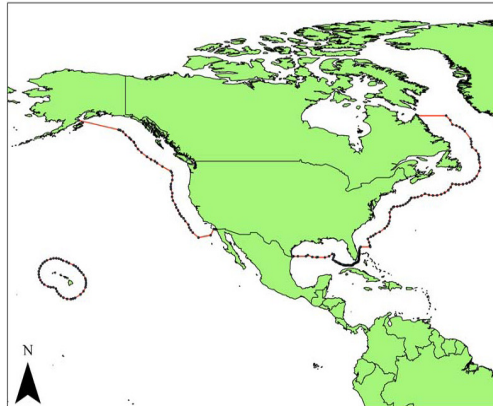
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*This Information Paper has been prepared for comment and discussion.*

## Part 1: Amendments to air pollution controls

Resolution MEPC.176(58), *Amendments to the Annex of the Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 relating thereto*, includes various changes to Annex VI of MARPOL that have been consolidated into a revised version of the Annex.

Accordingly, as Canada is a Party to Annex VI, the *Vessel Pollution and Dangerous Chemicals Regulations* (VPDCR) need to be amended to implement many significant changes. Although the resolution entered into force on July 1, 2010, some of its provisions are being phased in. Resolution MEPC.176(58) was subsequently amended by resolution MEPC.190(60) *Amendments to the Annex of the Protocol of 1997 to Amend the International Convention for the Prevention of Pollution from Ships, 1973, as Modified by the Protocol of 1978 relating thereto*, which establishes an emission control area for North America, including certain Canadian (territorial) sea waters.



Details on the Area are contained in the document MEPC.1/Circ.723, *Information on North American Emission Control Area (ECA) under Marpol Annex VI*. This amendment will require amendments to Division 6 of Part 2 of the *VPDCR* and would require that the portion of the North American emission control area outside waters under Canadian jurisdiction be added to the existing Annex VI emission control areas as addressed in Part 1 Section 8 of the *Regulations* for Canadian vessels. Resolution MEPC.190(60) will enter into effect on August 1, 2011, but a 12 month period of grace is given under regulation 14.7 of Annex VI, so its provisions will come into effect on August 1, 2012. The outer limits of the area as proposed are depicted in the following map from MEPC.1/Circ.723.

The following sets out proposed changes to the proposed ***Vessel Pollution Prevention and Dangerous Chemicals Regulations*** (the *Regulations*) to implement new provisions of treaties under the International Maritime Organization to which Canada is a Party and has obligations to implement. The proposed changes will also implement new requirements arising from consultations with stakeholders. The changes are presented in the following sections:

1. Amendments to air pollution controls to implement new IMO rules and a regime for vessels operating in the Great Lakes and St Lawrence Seaway;
2. New IMO standards for reducing greenhouse gas emissions;
3. Ship to ship transfers of oil at sea - new IMO requirements; and
4. Managing grey water from large passenger vessels. These standards are set out in Annex IV of MARPOL referred to as the Prevention of Pollution by Sewage from Ships.

**NOTE:** In the following text, the term “**Regulations**” refers to the proposed *Vessel Pollution Prevention and Dangerous Chemicals Regulations*.

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### **Definitions**

*With the amendments to the Vessel Pollution and Dangerous Chemicals Regulations, new definitions are required to incorporate the amendments to MARPOL Annex VI.*

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“cargo vessel” « *bâtiment de charge* »

“cargo vessel” means a vessel that is not a passenger vessel or pleasure craft.

“emission control area” « *zone de contrôle des émissions* »

“emission control area” means

- (a) for the purposes of section 110.3,
  - (i) the North American Emission Control Area, and
  - (ii) the United States Caribbean sea area described in Appendix VII of Annex VI to MARPOL; and
- (b) for the purposes of section 111,
  - (i) the Baltic Sea area, as defined in regulation 1.11.2 of Annex I to MARPOL,
  - (ii) the North Sea area, as defined in regulation 5(1)(f) of Annex V to MARPOL,
  - (iii) the North American Emission Control Area, and
  - (iv) the United States Caribbean sea area described in Appendix VII of Annex VI to MARPOL.

“Great Lakes and St. Lawrence waters” « *eaux des Grand Lacs et du fleuve Saint Laurant* »

“Great Lakes and St. Lawrence waters” means the Great Lakes, the St. Lawrence River and their connecting waters, and the Gulf of St. Lawrence to the baseline of the territorial sea.

“installed” *« installé »*

“installed”, in respect of a marine diesel engine on a vessel, means that the engine’s cooling or exhaust system is an integral part of the vessel or the engine’s fuelling system is permanently affixed to the vessel.

“marine diesel engine” *« moteur diesel marin »*

“marine diesel engine” means any reciprocating internal combustion engine operating on liquid or dual fuel, including any booster or compound system.

“marine sanitation device” *« appareil d’épuration marine »*

“marine sanitation device” means any equipment that is installed on a vessel and is designed to receive and treat sewage.

“major conversion” *« transformation importante »*

“major conversion” means in the case of a vessel referred to in Division 1, 2, 4 or 6 of Part 2, a conversion of a vessel that

- (a) substantially alters the dimensions or carrying capacity of the vessel;
- (b) changes the type of the vessel;
- (c) is intended to substantially prolong the life of the vessel; or
- (d) alters the vessel such that it becomes subject to provisions of Division 1, 2, 4 or 6 of Part 2 that would not be applicable to it otherwise.

“North American Emission Control Area” *« zone de contrôle des émissions nord-américaine »*

“North American Emission Control Area” means the North American area described in Appendix VII of Annex VI to MARPOL.

“passenger vessel” *« bâtiment à passager »*

“passenger vessel” means a vessel that carries more than 12 passengers.

“sludge oil” *« boues d’hydrocarbures »*

“sludge oil” means sludge from the fuel oil or lubricating oil separators, waste lubricating oil from main or auxiliary machinery, and waste oil from bilge water separators, oil filtering equipment or drip trays.

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**Exemptions for Testing Emission Control Technology**

*Governments may exempt ships conducting trials for the development of emission control technologies and engine design programmes from specific provisions of MARPOL Annex VI.*

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**The portion of section 5 of the Regulations before paragraph (a) is replaced by the following:**

**5.** For the purposes of section 187 of the Act and sections 7, 8, 29, 67, 82, 95, 100 and 126 substances may be discharged, and for the purposes of subsections 109(1) and section 110.6 substances may be emitted, if

(a) the discharge or emission is necessary for the purpose of saving lives, securing the safety of a vessel or preventing the immediate loss of a vessel;

(b) the discharge or emission occurs as a result of an accident of navigation in which a vessel or its equipment is damaged, unless the accident occurs as a result of an action that is outside the ordinary practice of seafarers;

(c) the discharge is a minimal and unavoidable leakage of oil that occurs as a result of the operation of an underwater machinery component;

(d) the discharge is an accidental loss of a synthetic fishing net and all reasonable precautions were taken to prevent the loss;

(e) the discharge is a discharge of garbage that results from damage to a vessel or its equipment, and all reasonable precautions were taken

(i) before the occurrence of the damage to prevent and minimize the discharge, and

(ii) after the occurrence of the damage to minimize the discharge; or

(f) the emission involves pollution of the air and results from damage to a vessel or its equipment, and all reasonable precautions were taken

(i) before the occurrence of the damage to prevent and minimize the emission, and

(ii) after the occurrence of the damage to minimize the emission.

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**Ozone Depleting Substances**

*Previously the Canadian regulations did not include a section on ozone depleting substances. This is a new addition to the regulation and provides restrictions on the installation of equipment containing ozone depleting substances and record keeping.*

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**Section 109 of the Regulations is amended by adding the following after subsection (4):**

(5) This section does not apply in respect of permanently sealed equipment that has no refrigerant charging connections or potentially removable components containing ozone depleting substances.

**Section 125 of the Regulations and the heading before it are replaced by the following:**

Ozone Depleting Substances Record Book

**124.1** (1) Every vessel referred to in subparagraph 122(a)(ii) or (iii) that has rechargeable systems that contain ozone depleting substances, other than equipment referred to in subsection 109(5), must maintain an Ozone Depleting Substances Record Book and keep it on board.

Entries

(2) The vessel's master must ensure that entries are made without delay in the Ozone Depleting Substances Record Book in respect of the following:

- (a) the repair or maintenance of equipment containing ozone depleting substances;
- (b) the recharge, full or partial, of equipment containing ozone depleting substances;
- (c) any emission of ozone depleting substances;
- (d) the transfer of ozone depleting substances to land-based reception facilities;  
and
- (e) the supply of ozone depleting substances to the vessel.

Mass of ozone depleting substances

(3) The entries must include the mass of ozone depleting substances that are involved in a recharge of equipment or that are emitted, transferred or supplied, as the case may be.

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### **Emission Control Areas**

The VPDCR includes provisions requiring Canadian vessels to comply with Emission Control Areas (notably the North Sea and the Baltic Sea). These provisions require adjustments.

### **Nitrogen Oxides (NO<sub>x</sub>)**

Annex VI sets the various stringency levels based on the year of build of a ship. There are three (3) tiers of NO<sub>x</sub> limits:

*Tier I – ships constructed on or after January 1, 2000 – December 31, 2010*

- 17.0 g/kWh when  $n$  is less than 130 rpm;
- $45 \cdot n(-0.2)$  g/kWh when  $n$  is 130 or more but less than 2,000 rpm;
- 9.8g/kWh when  $n$  is 2,000 rpm or more.

*Tier II – ships constructed on or after January 1, 2011*

- 14.4 g/kWh when  $n$  is less than 130 rpm;
- $44 \cdot n(-0.23)$  g/kWh when  $n$  is 130 or more but less than 2,000 rpm;
- 7.7 g/kWh when  $n$  is 2,000 rpm or more.

*Tier III – ships constructed on or after January 1, 2016 and operating in an ECA only*

- 3.4 g/kWh when  $n$  is less than 130 rpm;
  - $9 \cdot n(-0.2)$  g/kWh when  $n$  is 130 or more but less than 2,000 rpm; and
  - 2.0 g/kWh when  $n$  is 2,000 rpm or more
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## NITROGEN OXIDES (NO<sub>x</sub>) — MARINE DIESEL ENGINES

Application

**110.** Sections 110.1 to 110.3 do not apply to a marine diesel engine that is

- (a) intended to be used solely for emergencies;
- (b) intended to be used solely to power any device or equipment that is intended to be used solely for emergencies on the vessel on which the device or equipment is installed; or
- (c) installed in a lifeboat that is intended to be used solely for emergencies.

Tier 1 — power output of more than 130 kW

**110.1** (1) This section applies to a marine diesel engine with a power output of more than 130 kW that is installed on

- (a) a Canadian vessel or a Canadian pleasure craft that was constructed after December 31, 1999 but before January 1, 2011 and that does not engage only on voyages in waters under Canadian jurisdiction;

- (b) a foreign vessel or a foreign pleasure craft that was constructed after December 31, 1999 but before January 1, 2011;
- (c) a Canadian vessel or a Canadian pleasure craft that was constructed after May 2, 2007 but before the day on which this section comes into force and that engages only on voyages in waters under Canadian jurisdiction;
- (d) a Canadian vessel or a Canadian pleasure craft that was constructed before January 1, 2000 and that does not engage only on voyages in waters under Canadian jurisdiction, or a foreign vessel or a foreign pleasure craft that was constructed before January 1, 2000, if
  - (i) after December 31, 1999 but before January 1, 2011, the engine was replaced by a non-identical marine diesel engine or a marine diesel engine was added,
  - (ii) after December 31, 1999, a substantial modification, as defined in section 1.3.2 of the NO. Technical Code, is made to the engine, or
  - (iii) after December 31, 1999, the maximum continuous rating of the engine is increased by more than 10%; or
- (e) a Canadian vessel or a Canadian pleasure craft that was constructed before May 3, 2007 and that engages only on voyages in waters under Canadian jurisdiction, if
  - (i) after May 2, 2007 but before the day on which this section comes into force,
    - (A) the engine replaces a marine diesel engine that is not identical to the engine and that was installed on the vessel before May 3, 2007, or
    - (B) the engine is installed as an additional engine, or
  - (ii) after May 2, 2007,
    - (A) a substantial modification, as defined in section 1.3.2 of the NO. Technical Code, is made to the engine, or
    - (B) the maximum continuous rating of the engine is increased by more than 10%.

Tier 1 — power output of more than 5,000 kW

(2) This section applies to a marine diesel engine that has a power output of more than 5,000 kW and a per cylinder displacement of 90 L or more and that is installed on

- (a) a Canadian vessel or a Canadian pleasure craft that was constructed after December 31, 1989 but before May 3, 2007 and that engages only on voyages in waters under Canadian jurisdiction;

(b) a Canadian vessel or a Canadian pleasure craft that was constructed after December 31, 1989 but before January 1, 2000 that does not operate only in waters under Canadian jurisdiction; or

(c) a foreign vessel or a foreign pleasure craft that was constructed after December 31, 1989 but before January 1, 2000.

Emission limits

(3) Subject to sections 110.5 and 110.6 and regulations 13.7.1 to 13.7.3 of Annex VI to MARPOL, the authorized representative of a vessel must ensure that a marine diesel engine is not operated on the vessel if the quantity of nitrogen oxides emitted from the engine, calculated as the total weighted emission of NO<sub>x</sub>, exceeds the following limits, where *n* represents the rated engine speed (crankshaft revolutions per minute) of the engine:

(a) 17.0 g/kWh, where *n* is less than 130 revolutions per minute;

(b) 45.0  $n^{-0.2}$  g/kWh, where *n* is 130 revolutions per minute or more but less than 2,000 revolutions per minute; and

(c) 9.8 g/kWh, where *n* is 2,000 revolutions per minute or more.

Certificates

(4) In the case of Canadian vessel that engages only on voyages in waters under Canadian jurisdiction, a reference in regulation 13.7.1 of Annex VI to MARPOL to the vessel's International Air Pollution Prevention Certificate is to be read as a reference to the vessel's Canadian Air Pollution Prevention Certificate.

Tier II

**110.2** (1) This section applies to a marine diesel engine with a power output of more than 130 kW that is installed on

(a) a vessel that is constructed after December 31, 2010, other than a Canadian vessel or a Canadian pleasure craft that was constructed before the day on which this section comes into force and that engages only on voyages in waters under Canadian jurisdiction;

(b) a vessel, other than a Canadian vessel or a Canadian pleasure craft that was constructed before the day on which this section comes into force and that engages only on voyages in waters under Canadian jurisdiction, if

(i) the vessel was constructed before January 1, 2011, and

(ii) after December 31, 2010,

(A) the engine replaces a marine diesel engine that is not identical to the engine and that was installed on the vessel before January 1, 2011, or

(B) the engine is installed as an additional engine; or

(c) a Canadian vessel or a Canadian pleasure craft that engages only on voyages in waters under Canadian jurisdiction, if

(i) the vessel was constructed before the day on which this section comes into force, and

(ii) on or after the day on which this section comes into force,

(A) the engine replaces a marine diesel engine that is not identical to the engine and that was installed on the vessel before the day on which this section comes into force, or

(B) the engine is installed as an additional engine.

Non-application

(2) This section does not apply to a marine diesel engine to which section 110.3 applies.

Emission limits

(3) Subject to sections 110.5 and 110.6, the authorized representative of a vessel must ensure that a marine diesel engine is not operated on the vessel if the quantity of nitrogen oxides emitted from the engine, calculated as the total weighted emission of NO<sub>x</sub>, exceeds the following limits, where  $n$  represents the rated engine speed (crankshaft revolutions per minute) of the engine:

(a) 14.4 g/kWh, where  $n$  is less than 130 revolutions per minute;

(b)  $44 n^{0.25}$  g/kWh, where  $n$  is 130 revolutions per minute or more but less than 2,000 revolutions per minute; and

(c) 7.7 g/kWh, where  $n$  is 2,000 revolutions per minute or more.

Tier III

**110.3** (1) This section applies to a marine diesel engine with a power output of more than 130 kW that is installed on

(a) a vessel that is constructed on or after January 1, 2016; or

(b) a vessel that is constructed before January 1, 2016 if, on or after January 1, 2016,

(i) the engine replaces a marine diesel engine that is not identical to the engine and that was installed on the vessel before January 1, 2016, or

(ii) the engine is installed as an additional engine.

Exception — marine diesel engines installed on certain vessels

(2) This section does not apply to a marine diesel engine that is installed on

(a) a vessel with a length less than 24 m that has been specifically designed, and is used solely, for recreational purposes;

- (b) a vessel with a combined nameplate diesel engine propulsion power of less than 750 kW, if it is not possible for the engine to meet the requirements of subsection (4) because of design or construction limitations of the vessel; or
- (c) a vessel after December 31, 2015 as a replacement for a marine diesel engine that is not identical to the engine, if it is not possible for the engine to meet the requirements of subsection (4).

Exception — vessels operating in certain waters

- (3) This section does not apply in respect of
  - (a) a Canadian vessel or Canadian pleasure craft that is operating
    - (i) in arctic waters, or
    - (ii) in waters that are not waters under Canadian jurisdiction and are not within an emission control area; or
  - (b) a foreign vessel or a foreign pleasure craft that is operating in arctic waters or in Hudson Bay, James Bay or Ungava Bay.

Emission limits

(4) Subject to sections 110.5 and 110.6, the authorized representative of a vessel must ensure that a marine diesel engine is not operated on the vessel if the quantity of nitrogen oxides emitted from the engine, calculated as the total weighted emission of NO<sub>x</sub>, exceeds the following limits, where *n* represents the rated engine speed (crankshaft revolutions per minute) of the engine:

- (a) 3.4 g/kWh, where *n* is less than 130 revolutions per minute;
- (b)  $9 n^{-0.2}$  g/kWh, where *n* is 130 revolutions per minute or more but less than 2,000 revolutions per minute; and
- (c) 2.0 g/kWh, where *n* is 2,000 revolutions per minute or more.

Change of date

(5) If the IMO, in accordance with regulation 13.10 of Annex VI to MARPOL, sets a later date for the purposes of regulation 5.1.1 of that Annex, the references in subsection (1) to January 1, 2016 are to be read as references to that later date.

Determining the quantity of nitrogen oxides

**110.4** For the purposes of subsections 110.1(3), 110.2(3) and 110.3(4), the quantity of nitrogen oxides emitted must be determined in accordance with the NO<sub>x</sub> Technical Code.

Exhaust gas cleaning systems

**110.5** A marine diesel engine may be operated if an exhaust gas cleaning system or any other equivalent method is applied to the engine to reduce the quantity of nitrogen oxides emissions to no more than the limits specified in subsection 110.1(3), 110.2(3) or 110.3(4), as the case may be.

Exceptions to prohibited emissions

**110.6** Nitrogen oxides may be emitted in the circumstances set out in section 5 that apply in respect of the emission.

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***New controls for sulphur oxides***

*The Revised Annex VI provides new controls for sulphur oxides, which now need to be implemented by the VPDCR.*

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SULPHUR OXIDES (SO<sub>x</sub>)

Maximum sulphur content of fuel oil

**111.** (1) Subject to subsections (3) and (4) and section 111.1, the authorized representative of a vessel must ensure that the sulphur content of fuel oil used on board the vessel does not exceed

- (a) 3.50% by mass before January 1, 2020 in the case of a foreign vessel or a foreign pleasure craft that is operating in arctic waters or in Hudson Bay, James Bay or Ungava Bay;
- (b) 3.50% by mass before January 1, 2020 in the case of a Canadian vessel or a Canadian pleasure craft that is operating in arctic waters;
- (c) 3.50% by mass before January 1, 2020 in the case of a Canadian vessel that is operating in waters that are not waters under Canadian jurisdiction and that are not in an emission control area;
- (d) 0.50% by mass after December 31, 2019 in the case of a foreign vessel or a foreign pleasure craft that is operating in arctic waters or in Hudson Bay, James Bay or Ungava Bay;
- (e) 0.50% by mass after December 31, 2019 in the case of a Canadian vessel or a Canadian pleasure craft that is operating in arctic waters;
- (f) 0.50% by mass after December 31, 2019 in the case of a Canadian vessel that is operating in waters that are not waters under Canadian jurisdiction and that are not in an emission control area;
- (g) 1.00% by mass before January 1, 2015 in the case of a Canadian vessel or a Canadian pleasure craft that is operating in waters under Canadian jurisdiction other than arctic waters;

- (h) 1.00% by mass before January 1, 2015 in the case of a Canadian vessel that is operating in waters that are not waters under Canadian jurisdiction and that are in an emission control area;
- (i) 1.00% by mass before January 1, 2015 in the case of a foreign vessel or a foreign pleasure craft that is operating in waters under Canadian jurisdiction other than arctic waters or in Hudson Bay, James Bay or Ungava Bay;
- (j) 0.10% by mass after December 31, 2014 in the case of a Canadian vessel or a Canadian pleasure craft that is operating in waters under Canadian jurisdiction other than arctic waters;
- (k) 0.10% by mass after December 31, 2014 in the case of a Canadian vessel that is operating in waters that are not waters under Canadian jurisdiction and that are in an emission control area; and
- (l) 0.10% by mass after December 31, 2014 in the case of a foreign vessel or a foreign pleasure craft that is operating in waters under Canadian jurisdiction other than arctic waters or in Hudson Bay, James Bay or Ungava Bay.

Steam-powered foreign vessels and foreign pleasure craft

(2) In the case of a foreign vessel or a foreign pleasure craft that is powered by a propulsion boiler that was not originally designed for continued operation on marine distillate fuel or natural gas, the vessel's authorized representative must ensure that, when the vessel is operating in the North American Emission Control Area or in the Great Lakes and the St. Lawrence waters, the sulphur content of fuel oil is used on the vessel does not exceed

- (a) 3.50% by mass before January 1, 2020; and
- (b) 0.50% by mass after December 31, 2019.

Alternative measure

(3) Instead of meeting the requirements of subsection (1) or (2), the authorized representative may ensure that

- (a) the vessel operates an emission control system that meets the requirements of Resolution MEPC.184(59); and
- (b) the emissions of sulphur oxides produced by operating the system do not exceed what the emissions would be were the vessel to use fuel oil with the sulphur content by mass required by that subsection.

When different fuel is used

(4) The master of a vessel referred to in subparagraph 122(a)(ii) or (iii) must ensure that the requirements of regulation 14.6 of Annex VI to MARPOL are met if the vessel is entering or leaving an emission control area and is using different fuel oil within the area from the fuel oil used outside the area.

Residues from emission control systems

(5) If one or more of the vessels operates an emission control system that has been certified in accordance with Resolution MEPC.184(59), the authorized representative of the vessels must ensure that

(a) any exhaust gas cleaning system residues are delivered to an onshore reception facility that is licensed by the jurisdiction where the facility is located; and

(b) the washwater from the operation of the system, as well as the monitoring and recording of it, meets the requirement of section 10 of the Resolution.

Definition of “Resolution MEPC.184(59)”

(6) In this section and sections 111.1 and 111.2, “Resolution MEPC.184(59)” means the Annex to the *Guidelines for Exhaust Gas Cleaning Systems*, IMO Resolution MEPC.184(59).

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### ***Fleet averaging***

*Compliance with the sulphur content limits is assessed as a function of the average of total sulphur content of the fuel used by the fleet of a firm over a period of one year.*

*The proposed limits begin in August 1<sup>st</sup> 2012 at 1.5% and 1% in 2015 and 0.1% in 2020.*

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Application

**111.1** (1) This section, instead of section 110, applies in respect of the period referred to in paragraph (2)(a) or a year referred to in subsection (2) with respect to an authorized representative’s Canadian vessels when they are operating in the Great Lakes and St. Lawrence waters if, before the period or year starts, the authorized representative

(a) notifies the Marine Safety Directorate of the Department of Transport that the authorized representative elects to have this section apply to that period or year; and

(b) provides a report to the Marine Safety Directorate of the Department of Transport that specifies how each of the vessels will be managed for the purposes of meeting the requirements of subsection (2) or (3) for that period or year are met.

Average sulphur content

(2) If an election is made under subsection (1), the vessels’ authorized representative must ensure that the average sulphur content by mass of the total amount of fuel oil used by the vessels does not exceed

(a) 1.5% in the period starting August 1, 2012 and ending December 31, 2012;

- (b) 1.3% in 2013;
- (c) 1.2% in 2014;
- (d) 1.0% in 2015;
- (e) 0.8% in 2016;
- (f) 0.6% in 2017;
- (g) 0.5% in 2018;
- (h) 0.3% in 2019; and
- (i) 0.1% in 2020.

Alternative measures

(3) Instead of meeting the requirements of subsection (2), the authorized representative may

- (a) ensure that
  - (i) the vessels operate emission control systems that meets the requirements of Resolution MEPC.184(59), and
  - (ii) the total emissions of sulphur oxides produced by operating the systems do not exceed what the total emissions of sulphur oxides would be were the vessels to use fuel oil with the average sulphur content by mass required by that subsection;
- (b) ensure that equipment or materials are used or procedures are carried out on the vessels that result in total emissions of sulphur oxides that do not exceed what the total emissions of sulphur oxides would be were the vessels to use fuel oil with the average sulphur content by mass required by that subsection; or
- (c) ensure that any combination of the following on one or more of the vessels results in total emissions of sulphur oxides that do not exceed what the total emissions of sulphur oxides would be were all of the vessels to use fuel oil with the average sulphur content by mass required by that subsection:
  - (i) operating emission control systems that meet the requirements of Resolution MEPC.184(59),
  - (ii) using equipment or materials or carrying out procedures, and
  - (iii) using fuel oil with a reduced sulphur content.

Washwater from emission control systems

- (4) The authorized representative must ensure that
- (a) any exhaust gas cleaning system residues are delivered to an onshore reception facility that is licensed by the jurisdiction where the facility is located; and

(b) if one or more of the vessels operates an emission control system that has been certified, in accordance with Resolution MEPC.184(59), the washwater from the operation of the system, as well as the monitoring and recording of it, meets the requirement of section 10 of the Guidelines.

Report — how vessels will be managed

(5) If the manner of managing any of the vessels to meet those requirements changes after a report is provided under paragraph (1)(b), the authorized representative must provide a revised report to the Minister as soon as feasible.

Report — how vessels were managed

(6) The authorized representative must, on or before February 1 of the year following the period or year for which the election was made, provide a report to the Marine Safety Directorate of the Department of Transport that describes how each of the vessels were managed for the purposes of meeting the requirements of subsection (2) or (3) for that period or year.

Condition of Canadian Air Pollution Prevention Certificates

(7) If the Minister issues a Canadian Air Pollution Prevention Certificate to any of the vessels, the Minister is to attach as a condition to the Certificate the vessel's maximum allowable sulphur content of its fuel oil or the measures set out in subsection (3) that must be taken.

Documentation if an emission control system is operated

**111.2** If a vessel operates an emission control system referred to in paragraph 111(3)(a) or 111.1(3)(a) or (c),

- (a) the vessel must hold and keep on board a certificate of type approval certifying that the system meets the applicable requirements referred to in Resolution MEPC.184(59);
- (b) the vessel must keep on board an EGC system — Technical Manual for Scheme A or and EGC system — Technical Manual for Scheme B that meets the requirements of section 4.2.2 or 5.6, as the case may be, of Resolution MEPC.184(59);
- (c) the vessel must keep on board a SO<sub>x</sub> Emissions Compliance Plan that meets the requirements of section 9.1.1 of Resolution MEPC.184(59);
- (d) the authorized representative must ensure that the information required by Resolution MEPC.184(59) respecting the operation, maintenance, servicing, adjustments and monitoring of the system is recorded as required by the Resolution; and
- (e) the vessel must keep on board the records referred to in paragraph (d) in the form and manner required by the Resolution.

**Section 112 of the Regulations is amended by adding the following after subsection (2):**

VOC Management Plan

(3) The authorized representative of a crude oil tanker must ensure that a VOC Management Plan that meets the requirements of regulation 15.6 of Annex VI to MARPOL is implemented.

**Section 113 of the Regulations is amended by adding the following after paragraph (d):**

- (e) sewage sludge and sludge oil that are not generated on board the vessel; and
- (f) exhaust gas cleaning system residues.

**Subsection 115(5) of the Regulations is replaced by the following:**

Batch-loaded shipboard incinerators

(5) The authorized representative of a vessel on which a batch-loaded shipboard incinerator is installed must ensure that it is designed so that the temperature in the combustion chamber reaches 600°C within five minutes after start-up and will stabilize at a temperature not less than 850°C.

**The Regulations are amended by adding the following after section 116:**

UNAVAILABILITY OF COMPLIANT FUEL OIL

Canadian vessels and Canadian pleasure craft

**116.1** (1) The master of a Canadian vessel or a Canadian pleasure craft must notify the Minister and, if its port of destination is not in Canada, the competent authority of that port, that the vessel cannot purchase fuel oil that meets the requirements of this Division, if

- (a) the master attempted, in accordance with the vessel's voyage plan, to purchase such fuel oil and it was not available where planned; and
- (b) the master attempted to locate alternative sources for such fuel oil and, despite best efforts, was unable to do so.

Foreign vessels and foreign pleasure craft

(2) The master of a foreign vessel or a foreign pleasure craft whose port of destination is in Canada must notify the Minister that the vessel cannot purchase fuel oil that meets the requirements of this Division, if

- (a) the master attempted, in accordance with the vessel's voyage plan, to purchase such fuel oil and it was not available where planned; and
- (b) the master attempted to locate alternative sources for such fuel oil and, despite best efforts, was unable to do so.

Contents of notification

- (3) The notification must provide details of the attempts made, including
- (a) the vessel's name and, if applicable, the vessel's IMO ship identification number;
  - (b) the vessel's port of origin and port of destination; and
  - (c) the names and addresses of fuel oil suppliers contacted, and the dates on which contact was made.

## Part 2: New controls on greenhouse gas emissions

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*The International Maritime Organization approved technical regulations dealing with greenhouse gas emissions from ships under Annex VI to MARPOL. The following provisions would be added to Division 6.*

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### ENERGY EFFICIENCY

**116.2** (1) The following definitions apply in this section.

“bulk carrier” « *vraquier* »

“bulk carrier” means a vessel that is intended primarily to carry dry cargo in bulk, but does not include combination carriers.

“combination carrier” « *transporteur mixte* »

“combination carrier” means a vessel designed to carry liquid or dry cargoes in bulk.

“container vessel” « *porte-conteneurs* »

“container vessel” means a vessel designed exclusively for the carriage of containers.

“existing vessel” « *bâtiment existant* »

“existing vessel” means a vessel that is not a new vessel.

“gas tanker” « *transporteur de gaz* »

“gas tanker” means a cargo vessel constructed or adapted and used for the carriage in bulk of any liquefied gas.

“general cargo vessel” « *bâtiment pour marchandises diverses* »

“general cargo vessel” means a vessel with a multi-deck or single deck hull designed primarily for the carriage of general cargo, but does not include livestock carriers, barge carriers, heavy load carriers, yacht carriers or nuclear fuel carriers.

“new vessel” « *bâtiment neuf* »

“new vessel” means a vessel

- (a) for which the building contract is placed after June 30, 2013;
- (b) that is constructed after June 30, 2013, in the absence of a building contract;  
or
- (c) that is delivered 30 months or more after June 30, 2015.

“refrigerated cargo carrier” « *transporteur de cargaisons réfrigérées* »

“refrigerated cargo carrier” means a vessel designed exclusively for the carriage of refrigerated cargoes in holds.

“ro-ro cargo vessel” « *bâtiment de charge roulier* »

“ro-ro cargo vessel” means a vessel that is designed for the carriage of cargo transportation units.

“ro-ro cargo vessel (vehicle carrier)” « *bâtiment de charge roulier (transporteur de véhicules)* »

“ro-ro cargo vessel (vehicle carrier)” means a multi-deck ro-ro cargo vessel designed for the carriage of empty cars and trucks.

“ro-ro passenger vessel” « *bâtiment roulier à passagers* »

“ro-ro passenger vessel” means a passenger vessel with ro-ro cargo spaces.

“tanker” « *bâtiment-citerne* »

“tanker” means a chemical tanker, NLS tanker or oil tanker.

Application

(2) Subsections (3) and (4) do not apply in respect of vessels that have diesel-electric propulsion, turbine propulsion or hybrid propulsion systems.

Attained Energy Efficiency Design Index

(3) In the case of a vessel of 400 gross tonnage or more that is a bulk carrier, combination carrier, container vessel, gas tanker, general cargo vessel, passenger vessel, refrigerated cargo carrier, ro-ro cargo vessel, ro-ro cargo vessel (vehicle carrier), ro-ro passenger vessel or tanker, the authorized representative of the vessel must ensure that the requirements of regulation 20 of Annex VI to MARPOL are met if

- (a) the vessel is a new vessel; or
- (b) the vessel is an existing vessel and is considered as a newly constructed vessel for the purposes of chapter 4 of Annex VI to MARPOL.

Required Energy Efficiency Design Index

(4) In the case of a vessel of 400 gross tonnage or more that is a bulk carrier, combination carrier, container vessel, gas tanker, general cargo vessel, refrigerated cargo carrier or tanker, the authorized representative of the vessel must ensure that the requirements of regulation 21 of Annex VI to MARPOL are met if

(a) the vessel is a new vessel; or

(b) the vessel is an existing vessel and is considered as a newly constructed vessel for the purposes of chapter 4 of Annex VI to MARPOL.

Waivers

(5) In the case of a foreign vessel, the requirements of subsections (3) and (4) are subject to the exercise of the power conferred by regulation 19.4 of Annex VI to MARPOL by the government of the state whose flag the vessel is entitled to fly.

**Section 120 of the Regulations is replaced by the following:**

Issuance of Canadian Air Pollution Prevention Certificates

**120.** (1) On application by the authorized representative of a Canadian vessel or a Canadian pleasure craft, and subject to paragraphs 16(4)(b) to (d) of the Act, the Minister must issue a Canadian Air Pollution Prevention Certificate to the vessel if the applicable requirements of this Division, other than section 116.2, are met.

Issuance of International Air Pollution Prevention Certificates

(2) On application by the authorized representative of a Canadian vessel or a Canadian pleasure craft, and subject to paragraphs 16(4)(b) to (d) of the Act, the Minister must issue an International Air Pollution Prevention Certificate to the vessel if the applicable requirements of chapter III of Annex VI to MARPOL are met.

Issuance of International Energy Efficiency Certificate

(3) On application by the authorized representative of a Canadian vessel or a Canadian pleasure craft, and subject to paragraphs 16(4)(b) to (d) of the Act, the Minister must issue an International Energy Efficiency Certificate to the vessel if the applicable requirements of chapter 4 of Annex VI to MARPOL are met.

**Section 122 of the Regulations is replaced by the following:**

Certificates, etc.

**122.** (1) Every vessel of 400 gross tonnage or more must

(a) hold and keep on board

(i) a Canadian Air Pollution Prevention Certificate, or an International Air Pollution Prevention Certificate in the form set out in appendix I to Annex VI to MARPOL, if the vessel is a Canadian vessel or a Canadian pleasure craft and engages only on voyages in waters under Canadian jurisdiction,

(ii) an International Air Pollution Prevention Certificate in the form set out in appendix I to Annex VI to MARPOL, if the vessel

(A) is a Canadian vessel or a Canadian pleasure craft and does not engage only on voyages in waters under Canadian jurisdiction, or

(B) is entitled to fly the flag of a foreign state that is a party to Annex VI to MARPOL, or

- (iii) a certificate of compliance certifying that the vessel meets the applicable requirements of Annex VI to MARPOL, if the vessel is entitled to fly the flag of a state that is not a party to Annex VI to MARPOL; and
- (b) hold and keep on board
- (i) an International Energy Efficiency Certificate in the form set out in appendix VIII to Annex VI to MARPOL, if the vessel
    - (A) is a Canadian vessel and does not engage only on voyages in waters under Canadian jurisdiction, or
    - (B) is entitled to fly the flag of a foreign state that is a party to Annex VI to MARPOL, or
  - (ii) a certificate of compliance certifying that the vessel meets the applicable requirements of Annex VI to MARPOL, if the vessel is entitled to fly the flag of a state that is not a party to Annex VI to MARPOL; and
- (c) keep on board
- (i) if the vessel has a marine diesel engine in respect of which any of sections 110.1 to 110.3 applies, an applicable certificate of type approval and a Technical File that meets the requirements of section 2.3.4 of the NO. Technical Code,
  - (ii) if the vessel has a shipboard incinerator in respect of which section 115 applies, a certificate of type approval and an equipment operation manual that specifies how to operate the incinerator within the limits set out in paragraph 2 of appendix IV to Annex VI to MARPOL; and
  - (iii) if the vessel is referred to in subparagraph (a)(ii) or (iii), a list, in the form set out in Appendix 1 of Annex VI to MARPOL, of equipment that contains ozone depleting substances, other than equipment referred to in subsection 109(5).

VOC Management Plan

(2) Every crude oil tanker must keep on board the VOC Management Plan referred to in subsection 112(3).

Ship Energy Efficiency Management Plan

(3) Every vessel of 400 gross tonnage or more that does not engage only on voyages in waters under Canadian jurisdiction must keep on board a Ship Energy Efficiency Management Plan (SEEMP) that meets the requirements of regulation 22 of Annex VI to MARPOL for the vessel. The Plan may form part of the vessel's Safety Management System (SMS), if the vessel has one.

**Section 123 of the Regulations is replaced by the following:**

Record book of engine parameters

**123.** A vessel that is fitted with a marine diesel engine in respect of which section 110 applies must keep on board a record book of engine parameters and maintain it in accordance with section 6.2.2 of the NO. Technical Code.

**Section 125 of the Regulations and the heading before it are replaced by the following:**

Ozone Depleting Substances Record Book

**124.1** (1) Every vessel referred to in subparagraph 122(a)(ii) or (iii) that has rechargeable systems that contain ozone depleting substances, other than equipment referred to in subsection 109(5), must maintain an Ozone Depleting Substances Record Book and keep it on board.

Entries

(2) The vessel's master must ensure that entries are made without delay in the Ozone Depleting Substances Record Book in respect of the following:

- (a) the repair or maintenance of equipment containing ozone depleting substances;
- (b) the recharge, full or partial, of equipment containing ozone depleting substances;
- (c) any emission of ozone depleting substances;
- (d) the transfer of ozone depleting substances to land-based reception facilities;  
and
- (e) the supply of ozone depleting substances to the vessel.

Mass of ozone depleting substances

(3) The entries must include the mass of ozone depleting substances that are involved in a recharge of equipment or that are emitted, transferred or supplied, as the case may be.

*Subdivision 6  
Exemptions and Equivalents*

Board

**125.** (1) The Board may, in respect of Canadian vessels and Canadian pleasure craft, exercise the powers of the Administration conferred by regulations 3.2 and 4 of Annex VI to MARPOL.

Foreign governments

(2) In the case of a foreign vessel or a foreign pleasure craft, the requirements of this Division are subject to the exercise of the powers conferred by regulations 3.2 and 4 of

Annex VI to MARPOL by the government of the state whose flag the vessel is entitled to fly.

### **Part 3: Ship to ship transfers of oil at sea**

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#### **New International Standards**

*Resolution MEPC.186(59) amends Annex I of MARPOL in order to bring in new requirements for oil cargo transfers at sea that entered into force on January 1, 2011. As a result of this resolution, Canadian oil tankers that conduct cargo transfers at sea will be required to develop and follow an STS Operations Plan; foreign oil tankers that conduct cargo transfers in waters under Canadian jurisdiction will be required to carry and follow an Ship to Ship (STS) Operations Plan; a foreign tanker conducting a cargo transfer in waters under Canadian jurisdiction will be required to notify Canadian authorities at least 48 hths prior to the operation; and Canadian oil tankers conducting a cargo transfer in the territorial sea or EEZ of any Party to MARPOL will be required to notify the local authorities at least 48 hths prior to the operation. Although the resolution enters into force on January 1, 2011, some of its provisions are being phased in. Existing requirements relating to all oil transfers in Subdivision 5 of Division 1 of Part 2 of the Vessel Pollution and Dangerous Chemicals Regulations, including cargo transfers at sea, would not be affected. The following amendments to the Regulations are suggested in order to incorporate the requirements of Resolution MEPC.186(59).*

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#### **The Regulations are amended by adding the following after section 27**

##### STS Operations Plan

**27.1** (1) Every oil tanker of 150 gross tonnage or more that is not alongside a wharf or quay and that is engaged in a transfer operation with another oil tanker of oil or an oily mixture in bulk must keep on board an STS Operations Plan that meets the requirements of regulation 41 of Annex I to MARPOL. In the case of a Canadian vessel, the STS Operations Plan must be written in English or French or in both, according to the needs of the crew.

##### Exception

- (2) Subsection (1) does not apply to
- (a) transfer operations associated with fixed or floating platforms, including
    - (i) drilling rigs,
    - (ii) floating production, storage and off-loading facilities used for the offshore production and storage of oil, and
    - (iii) floating storage units used for the offshore storage of produced oil;
  - (b) bunkering operations; or

(c) transfer operations necessary for the purpose of saving lives or securing the safety of a vessel, or for combating specific pollution incidents in order to minimize the damage from pollution.

**Section 32 of the Regulations is amended by adding the following after subsection (3):**

Application in waters that are not Canadian waters

(4) Despite subsection (1),

(a) paragraph 38(1)(l) also applies in respect of Canadian vessels in waters other than waters under Canadian jurisdiction; and

(b) section 39.1 also applies in respect of Canadian vessels in the territorial sea or the exclusive economic zone of a foreign state that is a party to MARPOL.

**Subsection 38(1) of the Regulations is amended by striking out “and” at the end of paragraph (j), by adding “and” at the end of paragraph (k) and by adding the following after paragraph (k):**

(l) the vessel’s STS Operations Plan is implemented, if the vessel is of 150 gross tonnage or more and section 27.1 applies to the transfer operation.

**The Regulations are amended by adding the following after section 39:**

Notification of transfers between vessels

**39.1** (1) The master of an oil tanker of 150 gross tonnage or more must ensure that the tanker does not engage in a transfer operation to which section 27.1 applies unless, at least 48 hours before the transfer operation starts, the master gives notice in accordance with regulation 42.2 of Annex 1 to MARPOL to

(a) if the transfer operation is in waters under Canadian jurisdiction, a marine communications and traffic services officer; and

(b) if the transfer operation is in the territorial sea or the exclusive economic zone of a foreign state that is a party to MARPOL, the appropriate official of the foreign state.

Information not available 48 hours before transfer

(2) Despite subsection (1), information that is specified in regulation 42.2 of Annex 1 to MARPOL and is not, because of exceptional circumstances, available 48 hours before the transfer operation starts, does not need to be included with the notice. The master of the oil tanker that is planning to unload the oil or oil mixture must ensure that the tanker does not engage in the transfer operation unless the information that was unavailable is provided at the earliest opportunity to the marine communications and traffic services officer or appropriate official, as the case may be.

Change in estimated arrival time

(3) If the estimated time of arrival of an oil tanker at the location for the transfer operation changes by more than six hours, the master of the tanker must ensure that it does not engage in the transfer operation unless a revised estimated time of arrival is provided at the earliest opportunity to the marine communications and traffic services officer or appropriate official, as the case may be.

**The Regulations are amended by adding the following after section 42:**

STS Operations Plan — Records

**42.1** (1) The master of an oil tanker of 150 gross tonnage or more that is required by section 27.1 to keep on board an STS Operations Plan must ensure that any records required by the Plan are made.

(2) The oil tanker must keep each record on board for three years after it is made.

## **Part 4: Managing Greywater**

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### **Introduction of Canadian measures**

*Ongoing domestic consultations have indicated a need for controls on greywater from cruise ships and from small recreational vessels. The controls on passenger vessels would be in line with Canadian guidelines adopted by the cruise industry.*

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**The Regulations are amended by adding the following after section 131:**

DIVISION 8  
GREYWATER

**131.1** (1) The following definitions apply in this section.

“greywater” « *eaux grise* »

“greywater” means drainage from sinks, laundry facilities, showers and dishwashers. It does not include drainage from machinery spaces or workshop areas.

“new passenger vessel” « *bâtiment à passagers neuf* »

“new passenger vessel” means

(a) a passenger vessel that is constructed on or after the day on which this section comes into force;

(b) a passenger vessel that, on or after the day on which this section comes into force, undergoes a conversion that

- (i) substantially alters the dimensions or carrying capacity of the vessel,  
or
  - (ii) is intended to substantially prolong the life of the vessel; or
- (c) a vessel that, on or after the day on which this section comes into force, is converted into a passenger vessel.

“release” « déversement »

“release” includes spilling, leaking, pumping, pouring, emitting, emptying, throwing and dumping.

Deposits of solids and sheen on waters prohibited

(2) The authorized representative of a vessel in waters under Canadian jurisdiction must ensure that any release of greywater by or from the vessel into the waters does not cause the deposit of solids in or leave a sheen on the water.

New passenger vessels

(3) The authorized representative of a new passenger vessel that is in waters under Canadian jurisdiction and that is carrying more than 500 passengers must ensure that any release of greywater by or from the vessel into the waters

- (a) is passed through a marine sanitation device that meets the requirements of section 90; or
- (b) is made at a distance of at least 3 nautical miles from shore.

Certificates of type approval

(4) Every vessel that is fitted with a marine sanitation device in order to meet the requirements of paragraph (3)(a) must keep on board

- (a) a certificate of type approval
  - (i) in the case of a device referred to in subsection 90(1), certifying that the device meets the applicable requirements referred to in that subsection, and
  - (ii) in the case of a device referred to in subsection 90(2), certifying that the device was approved as an approved device under the *Great Lakes Sewage Pollution Prevention Regulations* and bearing the approval number; and
- (b) a manual that sets out the operational and maintenance procedures for the device.