



# SHIP SAFETY BULLETIN

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**Subject:** **NEW REGULATIONS FOR VESSEL AIR EMISSIONS, SHIP TO SHIP TRANSFERS OF OIL, AND GREYWATER**

This bulletin replaces Ship Safety Bulletin No. [03/2012](#)

## Purpose

The purpose of this bulletin is to inform stakeholders of new regulations now in place to address air emissions from vessels over 400 gross tonnage operating in Canada. The *Regulations Amending the Vessel Pollution and Dangerous Chemicals Regulations* (the Amendments) were published in Part II of the *Canada Gazette* on May 8, 2013.

Please note this bulletin replaces Ship Safety Bulletin [03/2012](#) and provides an overview of the Amendments. Further details related to implementing the Amendments can be found in the following Ship Safety Bulletins:

- Compliance with air emissions standards (05/2013)
- Reporting when compliant fuel is unavailable (04/2013)
- Fleet averaging plans and annual reporting (03/2013)
- Proposing alternative compliance regimes (02/2013)
- Compliance with energy efficiency standards (01/2013)

## Summary

The Amendments implement standards for the North American Emission Control Area (NA-ECA), energy efficiency of vessels and a regime for Canadian vessels in the Great Lakes and St. Lawrence waters. The Amendments also update standards for ship to ship transfers of oil at sea and implement new minimal standards for managing grey water.

For full text of the Amendments and the Regulatory Impact Analysis Statement, please see the [Canada Gazette, Part II](#).

### Keywords:

1. Air Emissions
2. Marine Fuels
3. Regulations
4. Pollution Prevention

### Questions concerning this Bulletin should be addressed to:

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613-991-3168

Transport Canada  
Marine Safety and Security  
Tower C, Place de Ville  
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Please note some requirements for air emissions are already in place under *Vessel Pollution and Dangerous Chemicals Regulations* (the Regulations). As the Amendments will be incorporated into the text of the Regulations, please consult the [Regulations](#).

The Regulations will be enforced in accordance with the [Policy on Compliance and Enforcement of the Canada Shipping Act, 2001](#)- TP13585.

## **Background**

The NA-ECA was adopted under Annex VI to the *International Convention for the Prevention of Pollution from Ships* (MARPOL) in March 2010 and came into force on August 1, 2012. It includes waters under Canadian jurisdiction south of 60°N extending out to approximately 200 nautical miles. The NA-ECA includes waters under the jurisdiction of the United States, including Hawaii and Alaska south of 60°N. The NA-ECA also includes North American waters under the jurisdiction of France—the islands of St. Pierre and Miquelon.

An alternative regime was developed for Canadian ships operating in the “Great Lakes and St. Lawrence waters”, which means the Great Lakes and the St. Lawrence River, their connecting waters, and the Gulf of St. Lawrence to the baseline of Canada’s territorial sea.

The new energy efficiency standards were adopted by the International Maritime Organization (IMO) in July, 2011, comprise the Energy Efficiency Design Index for new vessels built after January 1, 2013, and the Shipboard Energy Efficiency Operating Plan for existing vessels.

With the Amendments published, Canadian regulations to implement these international standards are now in place.

## **Overview of the Amendments**

### *Sulphur oxides*

For vessels inside the NA-ECA and throughout Canadian waters south of 60°N, the Amendments set a limit of 1.00% on the sulphur content of marine fuel. This will be followed by a 0.10% limit after January 1, 2015.

In waters outside of the NA-ECA, north of 60°N and including all of Hudson’s Bay, James Bay and Ungava Bay, the Amendments set the global standards under MARPOL for controlling sulphur oxides. This currently comprises a 3.50% limit on the sulphur content of marine fuel and after January 1, 2020, the Amendments set the standard to 0.50%.

In the event the International Maritime Organization decides to defer the 0.50% standard to January 1, 2025, the Regulations will be amended at that time.

Vessels over 400 gross tonnage are already required by the Regulations to carry bunker delivery notes, which stipulate the sulphur content of fuel delivered to the vessel. Further information on determining compliance is set out in Ship Safety Bulletin 05/2013.

In the event a vessel destined to a Canadian port has not been able to obtain compliant fuel, the Amendments require that vessel to report its situation to Transport Canada. A vessel destined to a port either in the United States or France (St. Pierre and Miquelon) is required to report to the Administrations. Further details, including a form, are set out in Ship Safety Bulletin 04/2013. Please note, such a vessel that is only transiting Canadian jurisdiction is not required to report to Transport Canada.

For Canadian vessels voyaging in the Great Lakes and St Lawrence waters, the Amendments provide a fleet averaging regime, where compliance with the sulphur content standards is determined by the average sulphur content of all the fuel used by a firm’s fleet. The regime requires plans and reports be submitted to Transport Canada and that special Canadian Air Pollution Prevention certificates will be issued. Further details are presented in Ship Safety Bulletin 03/2013.

#### *Nitrogen oxides*

The Amendments set controls for nitrogen oxides for engines installed on vessels that have power ratings over 130 kilowatts as described in table 1 below. Beyond this, the Amendments adopt the requirements for the management of engines to limit emissions of nitrogen oxides set out in the NOx Technical Code, 2008.

In the event a vessel undergoes a major conversion, or a new engine is installed which is substantially different from the old one, the more current standard would apply. For example, if a vessel built in 2001 undergoes a major conversion in 2014, it will then be subject to Tier II standards rather than Tier I.

#### *Smaller marine diesel engines*

The Amendments set a requirement for when a vessel installs new engine for propulsion that is 7 litres or more per cylinder and under 30 litres per cylinder. On or after January 1, 2016, such an engine will need to be certified to have met either the United States Environmental Protection Agency’s “Category 2” engine standards, or an equivalent international standards such as those in Europe.

**Table 1. Nitrogen oxide emissions limits**

Tier I	Tier II	Tier III
<b>Engines installed on vessels built between December 31,</b>	Engines installed on vessels built after December 31,	Engines installed on vessels built after January 1, 2016,

1999 to December 31, 2010	2010	that operate in ECAs
<ul style="list-style-type: none"> <li>• <b>17.0 g/kWh when n is less than 130 rpm;</b></li> <li>• <b><math>45 \cdot n^{(-0.2)}</math> g/kWh when n is 130 or more but less than 2,000 rpm;</b></li> <li>• <b>9.8 g/kWh when n is 2,000 rpm or more.</b></li> </ul>	<ul style="list-style-type: none"> <li>• 14.4 g/kWh when n is less than 130 rpm;</li> <li>• <math>44 \cdot n^{(-0.23)}</math> g/kWh when n is 130 or more but less than 2,000 rpm;</li> <li>• 7.7 g/kWh when n is 2,000 rpm or more.</li> </ul>	<ul style="list-style-type: none"> <li>• 3.4 g/kWh when n is less than 130 rpm;</li> <li>• <math>9 \cdot n^{(-0.2)}</math> g/kWh when n is 130 or more but less than 2,000 rpm; and</li> <li>• 2.0 g/kWh when n is 2,000 rpm or more.</li> </ul>

Note: n = rated engine speed (crankshaft revolutions per minute)

### *Energy efficiency*

The Amendments require all vessels to carry a Shipboard Energy Efficiency Management Plan or SEEMP. This can be a simple statement within a vessel's Safety Management System documents, or a more detailed document on its own.

The Amendments set requirements for new vessels built after June 30, 2013, that trade internationally to have calculated its Energy Efficiency Design Index (EEDI) and meet its required efficiency target set out in the July 2011 revisions to Annex VI to MARPOL. A vessel that undergoes a major conversion will be subject to the standards that apply in the year of that conversion rather than the year the vessel is originally built.

Please note the Amendments exempt from the EEDI requirements new Canadian vessels that voyage exclusively in Canadian jurisdiction or the Great Lakes. A Transport Canada technical study and found applying the EEDI to new Canadian vessels would result in higher greenhouse gas emissions. Transport Canada intends to apply this standard to new Canadian vessels once technical issues are resolved which will require two to three years.

For new Canadian vessels intended to voyage internationally, the Amendments require it to meet the relevant EEDI requirements.

Compliance is demonstrated by the International Energy Efficiency Certificate. Further details are set out in Ship Safety Bulletin 01/2013.

### *Certificates*

The Regulations require all vessels over 400 gross tonnage to have an Air Pollution Prevention Certificate.

Under the Amendments, a Canadian vessel that is relying on a fleet averaging regime for compliance with standards must carry a Canadian Air Pollution Prevention Certificate. Canadian vessels that fully comply with MARPOL standards must carry the International Air Pollution Prevention Certificate and do not need to carry the Canadian certificate.

All vessels on international trade are required by the Amendments to carry an International Energy Efficiency Certificate, which is issued based on an existing vessel having a SEEMP and a new vessel having met its EEDI target.

A new Canadian vessel that voyages only in Canada or the Great Lakes water would not be issued an International Energy Efficiency Certificate, if it does not determine its EEDI value as it is exempt. A new Canadian vessel voyaging internationally is required to have an EEDI calculated and subsequently would be issued this certificate.

#### *Equivalent measures*

The Amendments allow for alternative compliance options that result in equivalent emissions to using the compliant fuel.

Typically, this would be expected to be scrubbers, but can include regional fuel averaging regimes. For a Canadian vessel, an alternative compliance option must be approved through the Marine Technical Review Board. For a foreign vessel, this must be approved by the country where it is registered (the flag State). Before a flag State grants such an approval, Canada and countries that are part of emission control areas where that vessel may voyage, expect to be able to review and consent to the alternative compliance option. Further details are set out in Ship Safety Bulletin 02/2013.

#### *Ship to ship transfers of oil*

For oil tankers of 150 gross tonnage or more, the Amendments implement amendments to Annex I to MARPOL for new requirements for oil cargo transfers at sea that entered into force on January 1, 2011 (IMO Resolution MEPC.186 (59)).

Those oil tankers are required to keep on board an STS operations Plan, if they are not alongside a wharf or quay and are engaged with another oil tanker in a transfer operation involving oil or an oily mixture in bulk. For Canadian tankers, the authorized representative is required to ensure that the Plan is implemented. For foreign tankers, this requirement is the responsibility of the master. Records required by the STS operations Plan are required to be made and kept on board for 3 years.

If the transfer operation involves a Canadian vessel and is in the territorial sea or Exclusive Economic Zone of any Party to MARPOL other than Canada, the vessel's master is required to notify the local authorities at least 48 hours prior to the operation.

If the transfer operation is in waters under Canadian jurisdiction the vessel's master is required to notify Canadian authorities at least 48 hours prior to the operation.

### *Greywater*

Greywater refers to non-sewage drainage from sinks, laundry machines, bath tubs, shower-stalls or dishwashers. The Amendments set a minimal standard that discharges of greywater from a vessel in waters under Canadian jurisdiction other than arctic waters must not result in the deposit of solids or cause any sheen on the water.

The Amendments also require new, large passenger vessels which are carrying more than 500 passengers to ensure that any greywater released from the vessel has been passed through a certified marine sanitation device or is done at least 3 nautical miles from shore.

### **Questions**

Questions should be directed to:

Environmental Protection (AMSEE)  
Operations and Environmental Programs  
Marine Safety and Security  
Transport Canada  
330 Sparks St, 10<sup>th</sup> floor  
Ottawa, Ontario K1A 0N8  
Email: [marinesafety-securitemaritime@tc.gc.ca](mailto:marinesafety-securitemaritime@tc.gc.ca)

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