ENVIRONMENT CANADA

GUIDANCE DOCUMENT

OFF-ROAD SMALL SPARK-IGNITION ENGINE EMISSION REGULATIONS

under the
Canadian Environmental Protection Act, 1999

Disclaimer

This document is intended to provide guidance only. It does not in anyway supersede or modify the *Canadian Environmental Protection Act, 1999* or the *Off-Road Small Spark-Ignition Emission Regulations.* In the event of an inconsistency between this document and the Act and/or the Regulations, the Act and the Regulations prevail.

Transportation System Branch
Environment Canada

November 2003

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1. INTRODUCTION

This guidance document provides information about the requirements of the *Off-Road Small Spark-Ignition Engine Emission Regulations* established under the authority of Part 7, Division 5 of the *Canadian Environmental Protection Act*, 1999 (CEPA 1999).

The text of the enabling Act is not repeated in the Regulations, so this guidance document cites both the Regulations and the Act to make it easier to understand the requirements of the Regulations.

The Regulations are aligned with the corresponding U.S. Environmental Protection Agency (EPA) rules for off-road spark-ignition engines. Engines sold concurrently in Canada and the United States and covered by a valid U.S. EPA certificate of conformity can enter Canada with a declaration at the border. For other engines, the evidence of conformity must be obtained and produced in a form and manner that is satisfactory to the Minister.

Figure 1 illustrates how this document is organized. Each chapter includes a short description of a specific aspect of the Regulations followed by additional details, often provided in an interrogative form.

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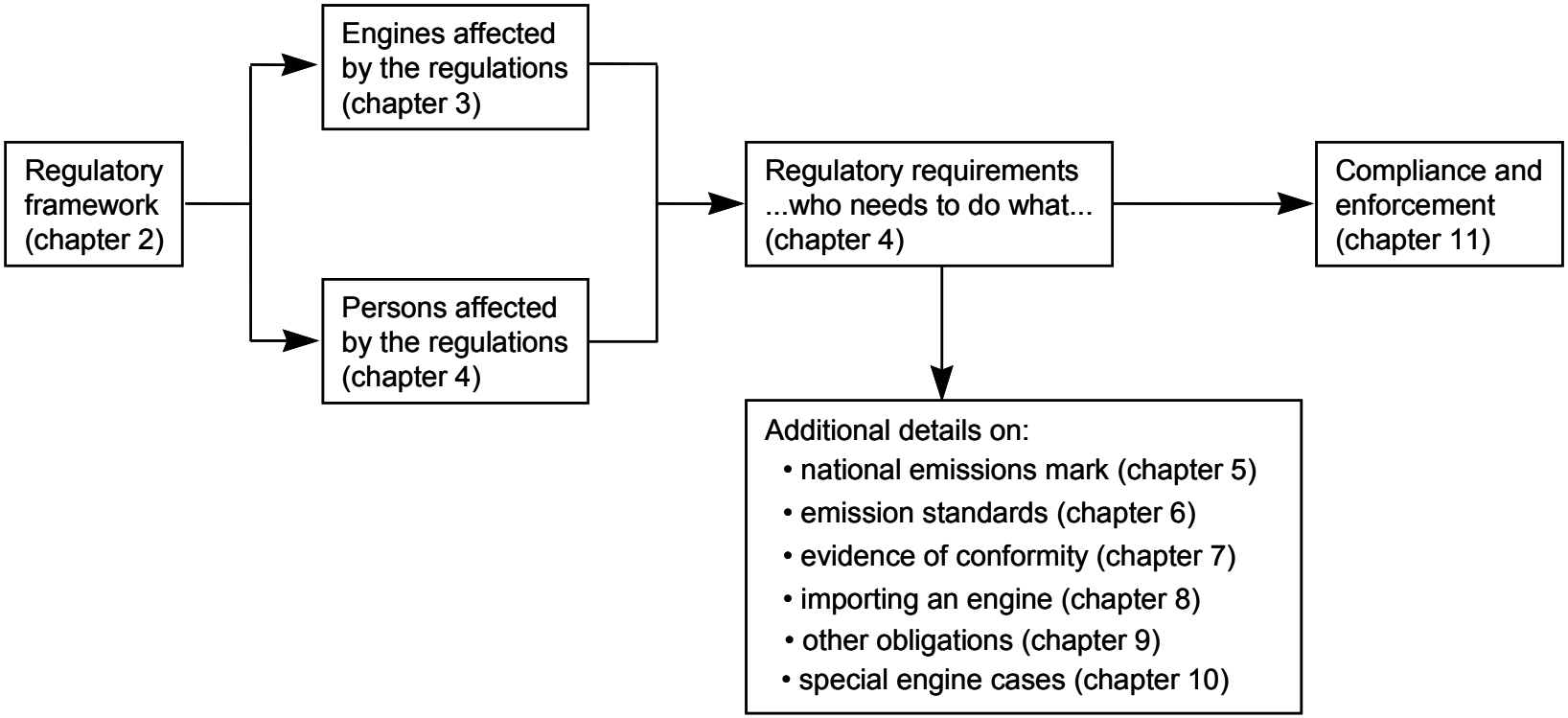

Figure 1: Structure of the Guidance Document

2. REGULATORY FRAMEWORK

The *Off-Road Small Spark-Ignition Engine Emission Regulations* establish, under the authority of the *Canadian Environmental Protection Act*, 1999, Canadian emission standards aligned with those of the U.S. Environmental Protection Agency (EPA) for small spark-ignition engines.

The text of the Regulations can be retrieved from the CEPA Environmental Registry at http://www.ec.gc.ca/CEPARegistry/regulations/.

2.1 What is the *Canadian Environmental Protection Act*, 1999 (CEPA 1999)?

The *Canadian Environmental Protection Act*, 1999 (CEPA 1999), "an Act respecting pollution prevention and the protection of the environment and human health in order to contribute to sustainable development", is Canada's principal piece of federal environmental protection legislation. Part 7, Division 5, contains the legislative authority for making regulations for the purpose of controlling vehicle, engine and equipment emissions.

The text of CEPA 1999 can be retrieved at http://laws.justice.gc.ca/en/C-15.31/index.html.

2.2 What is the CEPA Environmental Registry?

The CEPA Environmental Registry is a comprehensive source of public information relating to activities under CEPA 1999. In addition to providing up-to-date copies of current CEPA 1999 instruments, the primary objective of the Registry is to encourage and support public participation in environmental decision-making, by facilitating access to documents arising from the administration of the Act.

The CEPA Environmental Registry is accessible at http://www.ec.gc.ca/CEPARegistry/default.cfm.

2.3 What is the *Code of Federal Regulations*?

The *Code of Federal Regulations* is a codification of the general and permanent rules published by the U.S. Federal Government. In this guidance document, the expression "CFR" always means Title 40, Part 90, *Control of Emissions from Nonroad Spark-Ignition Engines* of the Code of Federal Regulations. The text of the CFR can be retrieved at http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr90_02.html.

The Regulations incorporate portions of the CFR by reference to ensure alignment of the emission standards between the two countries. Subsection 1(2) of the Regulations states that incorporation by reference to the CFR shall be read as **excluding**

(1) references to the EPA or its Administrator exercising discretion in any way;

(2) alternative standards related to the averaging, banking and trading of emission credits, to small volume manufacturers or to financial hardship; and

(3) standards or evidence of conformity from any other jurisdiction or authority other than the EPA.

2.4 Are the Regulations identical to the EPA rules?

No. While the overall missions of Environment Canada and EPA are quite similar, the constitutions and laws of both countries differ. There are significant differences in how environmental protection regulations can be developed and enforced in Canada and in the U.S.

The Regulations were developed to align Canadian emission standards with those of the EPA. Ancillary provisions are as similar as possible, considering the different regulatory frameworks in Canada and the U.S.

2.5 Certain provisions of the Regulations state that information can be requested by or sent to the Minister. Who is the Minister?

The "Minister" is the federal Minister of the Environment. An official of Environment Canada may make a request for information on behalf of the Minister. Where the Regulations require information to be submitted to the Minister, unless otherwise directed, it should be sent to:

Director, Transportation Systems Branch
Air Pollution Prevention Directorate
Environment Canada
351 St-Joseph Blvd
Gatineau, Quebec K1A 0H3
fax: 819-953-7815
phone: 819-953-1120
e-mail: reg_tsb_dst@ec.gc.ca

3. ENGINES SUBJECT TO THE REGULATIONS

The Regulations prescribe standards for off-road engines that

(1) operate under characteristics significantly similar to the theoretical Otto combustion cycle;
(2) use spark plugs or other sparking devices; and
(3) do not develop more than 19 kW of power.

These engines typically use gasoline but liquefied petroleum gas or natural gas can also be used. Small spark-ignition engines are typically found in lawn and garden machines (hedge trimmers, brush cutters, lawnmowers, garden tractors, snowblowers, etc.); in light-duty industrial machines (generator sets, welders, pressure washers, etc.); and in light-duty logging machines (chainsaws, log splitters, shredders, etc.).

The Regulations apply to engines manufactured in Canada and "transported within Canada" (i.e., transported between provinces) and to engines imported into Canada.

Section 3.4 of this guidance document identifies categories of small spark-ignition engines that are not subject to these Regulations.

3.1 What is an off-road engine?

An off-road engine is defined as an internal combustion engine that is used or designed to be used:

(1) by itself and that is capable of being carried or moved from one location to another;
(2) in or on a machine that is designed to be or capable of being carried from one location to another (e.g. a portable generator);
(3) in or on a machine that is self-propelled (e.g. a go-kart);
(4) in or on a machine that serves a dual purpose by both propelling itself and performing another function (e.g. a garden tractor); or
(5) in or on a machine that is intended to be propelled while performing its function (e.g. a lawn mower).

Under section 149 of CEPA 1999, engines designed to propel an aircraft or rolling stock (e.g., a locomotive) or compression-ignition engines rated at 37 kW and above designed to propel a vessel (i.e., a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water) are not within the scope of Part 7, Division 5 of CEPA 1999 and are not engines under the Regulations.

3.2 What is a machine?

"Machine" means anything, including a vehicle, device, appliance or implement that is powered by an engine. A chainsaw, a lawn mower, a garden tractor, or a portable generator powered by a small spark-ignition engine would be considered a machine for the purpose of these Regulations. In the CFR, the words "equipment" or "nonroad vehicle" generally have the same meaning as "machine" in the Regulations.

While most provisions of the Regulations cover specifically engines, machines are also impacted to the extent that the machine contains an engine covered by these Regulations.

3.3 What is the difference between "equipment" and "machine"?

The word "equipment" is often used in everyday language as a general descriptor for tools or machinery powered by off-road engines, such as in the expression "lawn and garden equipment".

Section 149 of CEPA 1999 assigns a specific meaning for the word "equipment" as "any prescribed equipment that is designed for use in or on a vehicle or engine". The legislative meaning of "equipment" is intended to address engine accessories including but not limited to catalytic converters or fuel systems. The Regulations use the term "machine" to designate a vehicle, device, appliance or implement powered by an engine.

3.4 Which categories of off-road small spark-ignition engines are excluded from the Regulations?

The following small spark-ignition engines are not subject to the Regulations:

(1) engines designed exclusively for competition and with features not easily removed and with characteristics that render their use other than in competition unsafe, impractical or unlikely;
(2) engines regulated by the *On-Road Vehicle and Engine Emission Regulations*;
(3) engines designed to be used exclusively in underground mines;
(4) engines designed to power snowmobiles, all-terrain vehicles, and off-highway motorcycles;
(5) hobby engines designed to be used in reduced-scale models of vehicles that are not capable of transporting a person;
(6) engines designed to be used exclusively in emergency and rescue machines;
(7) engines designed to be used in machines designed for use in military combat or combat support;

(8) engines designed to propel a vessel (i.e., a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water); and
(9) engines that are being exported and that are accompanied by a written statement establishing that they will not be sold or used in Canada.

3.5 Which small spark-ignition engines do not have to conform to some provisions of the Regulations?

The following engines do not have to conform to some of the provisions of the Regulations:

(1) engines that are imported into Canada solely for purposes of exhibition, demonstration, evaluation or testing;
(2) engines that are being imported exclusively for use by a visitor to Canada or by a person passing through Canada to another country;
(3) engines that are in transit through Canada, from a place outside Canada to another place outside Canada;
(4) engines that do not meet the requirements of the Regulations at importation or when leaving a factory but that will meet these requirements before they leave the possession or control of the company[1], such as incomplete engines;
(5) replacement engines as this term is defined in subsection 13(1) of the Regulations; and
(6) engines for which the Governor-in-Council has granted an exemption.

Additional details on special provisions in respect of these engines are given in Chapter 10 of this guidance document.

3.6 When do the Regulations come into force?

The Regulations come into force on January 1, 2005, except for the sections related to the national emissions mark which come into effect on the date the Regulations were registered. Additional details on the national emissions mark are provided in Chapter 5 of this guidance document.

The standards apply to engines of the 2005 and later model years.

3.7 What is a model year?

Model year is the year determined by the manufacturer to designate the period of production of a particular model of an engine and is defined in section 4 of the Regulations.

[1] Chapter 4 of this guidance document provides details on the exact meaning of “company” under CEPA 1999.

The model-year can span a period of up to two calendar years less one day but can include only one January 1. The model year corresponds to the calendar year during which production occurred or the calendar year during which January 1 fell. For example a line of engines produced between March 1, 2006 and January 31, 2007 would correspond to 2007 model year engines.

4. PERSONS AFFECTED BY THE REGULATIONS

The Regulations apply mainly to companies and, in section 149 of CEPA 1999, a company is defined as a "**person** who

(a) is engaged in the business of manufacturing vehicles, engines or equipment in Canada;
(b) is engaged in the business of selling to other persons, for the purpose of resale by those persons, vehicles, engines or equipment obtained directly from a person described in paragraph (a) or the agent of such person; or
(c) imports any vehicle, engine or equipment into Canada for the purpose of sale."

Note that, under section 149 of CEPA 1999, the term "manufacture" includes any process of assembling or altering any vehicle, engine or equipment before its sale to the first retail purchaser. Under section 3 of CEPA 1999, "to sell" includes to offer for sale or lease, have in possession for sale or lease or deliver for sale or lease.

To highlight that "company" under CEPA 1999 means only specific types of commercial entities, the word will be italicized throughout the rest of this guidance document.

Four different types of persons are potentially affected by the Regulations:

- Canadian engine manufacturer;
- Distributor of Canadian engines or machines containing Canadian engines;
- Importer of engines or machines for the purpose of sale ; and
- Person who is not a *company* importing an engine or machine.

Foreign engine manufacturers are not directly subject to CEPA 1999 or to the Regulations. However, engines imported into Canada must conform to Canadian emissions regulations.

4.1 Who is a Canadian engine manufacturer?

A person engaged in the business of manufacturing vehicles, engines or equipment in Canada is a *company* under CEPA 1999.

Under CEPA 1999, “to manufacture” includes any process of assembling or altering any engine before its sale to the first retail purchaser. Therefore a person who modifies an engine before it is sold, for example by adapting a gasoline engine to run on propane or natural gas, would be considered as a *company* for the purposes of the Regulations.

The Regulations apply to engines manufactured in Canada only if they are “transported within Canada”, i.e., transported between provinces or territories.

4.2 Who is a distributor of Canadian engines?

A person who is engaged in the business of selling to other persons, for the purpose of sale by those persons, engines obtained directly from a Canadian engine manufacturer or its agent is a distributor of Canadian engines and is a *compan*y under CEPA 1999.

Engines manufactured in Canada that are transported between provinces or territories require a national emissions mark (see Chapter 5). One national emissions mark is required per engine. In the case of an engine manufactured in Canada and distributed by a *company* other that the manufacturer, only one *company* need apply the national emissions mark.

4.3 When is an importer a *company* under CEPA 1999?

Under CEPA 1999, a *company* is a person importing engines, or machines powered by these engines, for the purposes of sale.

A person importing engines for a purpose other than sale *is not a company* under CEPA 1999. An individual or commercial entity importing engines directly for their own use is not considered to be a *company* for the purposes of the Regulations. For example, a logging business importing directly chainsaws to be used by its employees would not be considered a *company*. However, there are some regulatory requirements for this category of persons.

4.4 What are the regulatory requirements for each type of “person” affected by the Regulations?

Table 1 provides a summary of the requirements for the four different categories of persons affected by Regulations. When necessary, more detailed information is provided elsewhere in the guidance document.

Table 1
Summary of Regulatory Requirements

	Canadian engine manufacturer	Distributor of Canadian engines	Engine or machine importer		Chapter in the guidance document
			For the purpose of sale	For other purposes	
Company under CEPA 1999 ?	yes	yes	yes	no	4
Apply the national emissions mark	X	X			5
Supply engines that comply with standards	X	X	X	(1)	6
Provide evidence of conformity upon request	X	X	X	(1)	7
Submit an importation declaration			X		8
Prescribed label is affixed to an imported engine				X	8
Provide maintenance instructions	X	X	X		9
Cause notice of defect to be given, if necessary	X	X	X		9

(1) The presence of the prescribed label on the engine is considered as evidence that the engine conforms to the prescribed or equivalent emission standards when it is imported by a person for purposes other than sale.

4.5 How are foreign engine manufacturers affected by the Regulations?

A foreign engine manufacturer produces engines outside Canada and is not directly subject to CEPA 1999 or to the Regulations. However, engines imported into Canada must conform to Canadian emission Regulations.

Importers may require the assistance of a foreign engine manufacturer to demonstrate compliance with the Regulations. In particular, the assistance of foreign engine manufacturers will be required to ensure that engines imported into the Canadian market meet the prescribed standards and to provide evidence of conformity to that effect. These requirements are described in Chapters 6 and 7 of this guidance document.

5. NATIONAL EMISSIONS MARK

Companies are generally required to apply the national emissions mark to prescribed engines that are manufactured in Canada for sale in Canada. Section 152 of CEPA 1999 prohibits a *company* from transporting engines manufactured in Canada between provinces or territories unless the engine has a national emissions mark applied to it. Use of the national emissions mark denotes compliance with the Regulations.

The national emissions mark is the symbol shown in Figure 2. Section 150 of CEPA 1999 specifies that the national emissions mark is a national trademark and establishes limitations on any person's use of the mark (or the use of any other mark in such a manner that it is likely to be mistaken for a national emissions mark). *Companies* must obtain the Minister's authorization to use the national emissions mark.

Figure 2: The national emissions mark

5.1 Are there any conditions regarding applying a national emissions mark to an engine?

Yes. Section 153 of CEPA 1999 prohibits a *company* from applying the national emissions mark to any engine unless a number of stated requirements are met. The emissions standards that the engine must meet are prescribed in sections 9 to12 of the Regulations.

5.2 When do the provisions regarding the national emissions mark come into effect?

Sections 6 to 8 of the Regulations have been in effect since registration in November 2003 to allow early authorization for *companies* to apply the national emissions mark to engines manufactured before January 1, 2005 that meet applicable 2005 model year standards.

The other provisions of the Regulations come into effect on January 1, 2005.

5.3 Who can apply the national emissions mark?

Under section 151 of CEPA 1999, a *company* must have received an authorization from the Minister to apply the national emissions mark.

5.4 How does a *company* obtain the Minister's authorization to use the national emissions mark?

A *company* must submit an application to obtain the Minister's authorization to use the national emissions mark. The information to be included in the application is set out in section 6 of the Regulations. A *company*'s application must be signed by a person who is authorized to act on behalf of the *company*.

When the Minister authorizes a *company* to use the national emissions mark, a unique identification number will be assigned.

5.5 What information could satisfy the requirement of paragraph 6(d) of the Regulations to show that the *company* is capable of verifying compliance with the standards?

Information to show that a *company* is capable of verifying compliance with the regulatory standards may be presented in various forms, including but not limited to,

(1) Recent experience in obtaining U.S. EPA emission certification

When applicable, a *company* may provide the following statement:

"The *company* has been issued certificates of conformity by the U.S. EPA within the last five years as evidence of conformity with U.S. regulatory emission standards for engines covered under the *Off-Road Small Spark-Ignition Engine Emission Regulations.*"

(2) Technical Information

The *company* may provide technical information to show that it is capable of verifying compliance with the standards set out in the Regulations including, but not limited to, information describing the capabilities of the emission test facilities operated by, or on behalf of, the *company* to produce evidence that its engines conform to the standards set out in the Regulations. This may include evidence that the emission test facility used on behalf of the *company* has produced test results used in support of a successful application to the EPA for the issuance of a certificate of conformity.

The Minister will assess the information provided to determine if the *company* may apply the national emissions mark on engines.

5.6 Do imported engines required the national emissions mark?

No. Subsection 153(1) of CEPA 1999 directly requires that imported engines conform to the requirements of the Regulations as a condition for their importation into Canada. Accordingly, the application of a national emissions mark to imported engines is not required to demonstrate such conformity.

5.7 Are there any requirements regarding the size, location and manner of affixing the national emissions mark to an engine?

Yes. Requirements regarding the size, location and manner of affixing the national emissions mark to vehicles or engines are addressed in section 7 of the Regulations.

The size of the national emissions mark shall be at least 7mm in height and 10mm in width. The identification number assigned by the Minister (described in section 5.4 of this document) shall be in figures that are at least 2mm in height, immediately below or to the right of the mark.

The national emissions mark shall be located on or immediately next to the EPA engine information label or, if there is no such label, in a visible, readily accessible location.

The national emissions mark shall be on a label that is permanently applied, resistant to any weather condition and bears legible and indelible inscriptions.

6. EMISSION STANDARDS

The Regulations prescribe that the engine conform to applicable standards comprising provisions for:

a) emission control system and defeat device (section 9 of the Regulations);
b) exhaust emissions (section 10 of the Regulations);
c) crankcase emissions (section 11 of the Regulations); and
d) adjustable parameters (section 12 of the Regulations).

These standards are aligned with U.S. EPA rules for small spark-ignition engines as published in the CFR.

Under section 14 of the Regulations, an engine covered by an EPA certificate of conformity and sold concurrently in Canada and the U.S. is deemed to conform to the Canadian emission standards.

6.1 What is an emission control system?

Subsection 1(1) of the Regulations defines an emission control system as "any device, system or element of design that controls or reduces the exhaust emissions from an engine".

6.2 Are there restrictions on an emission control system installed on a prescribed engine?

Yes. Subsection 9(1) of the Regulations prescribes that an emission control system shall not release a substance that causes air pollution and that would not have been released if the system were not installed. In addition, the emission control system shall not make the engine or the machine in which the engine is installed unsafe or endanger persons or property near the engine or machine.

6.3 What is a defeat device?

A defeat device means any device, system, or element of design which senses operation outside emission certification test conditions and reduces emission control effectiveness. The Regulations incorporate by reference the CFR definition of defeat device.

Under subsection 9(2) of the Regulations, no engine can be equipped with a defeat device.

6.4 What are the exhaust emission standards?

The exhaust emission standards are aligned with those of the U.S. EPA and the Regulations incorporate by reference sections 90.103, 90.104 and 90.105 of the CFR.

The exhaust emission standards are divided into seven classes based on engine displacement and usage in either handheld or non-handheld applications. The Regulations establish a maximum level of carbon monoxide (CO) and combined hydrocarbon and oxides of nitrogen (HC+NOx) emissions for each engine class. The standards are defined as mass of pollutant per unit of engine work expressed in grams per kilowatt-hours (i.e., brake-specific emissions).

Table 2 provides a summary of the exhaust emission standards. Some engine classes include a combined non-methane hydrocarbons (NMHC) and NOx standard that applies when the engine is fuelled by natural gas.

Table 2 —Engine classes and exhaust emission standards

Engine class	Engine Type	Engine Displacement (cm^3)	Effective date (model year)	standard HC+NOx (g/kW-hr)	standard NMHC+NOx[c] (g/kW-hr)	standard CO (g/kW-hr)
I-A	non-handheld	<66	2005 and later	50[a]	--	610[a]
I-B	non-handheld	<100 and ≥66	2005 and later	40[a]	37[a]	610[a]
I	non-handheld	<225 and ≥100	2005 and later (1) 2005 and later (2) 2007 and later (3)	16.1[b] 16.1[a] 16.1[a]	-- 14.8[a] 14.8[a]	519[b] 610[a] 610[a]
II	non-handheld	≥225	2005 and later	12.1[a]	11.3[a]	610[a]
III	handheld	<20	2005 and later	50[a]	--	805[a]
IV	handheld	<50 and ≥20	2005 and later	50[a]	--	805[a]
V	handheld	≥50	2005 2006 2007 and later	119[a] 96[a] 72[a]	-- -- --	603[a] 603[a] 603[a]

[a] Standards apply throughout the engine useful life
[b] Standards apply only when the engine is new
[c] Some engine classes include a combined non-methane hydrocarbons (NMHC) and NOx standard that applies when the engine is fuelled by natural gas.

(1) For models already in production at coming into force of the proposed Regulations
(2) For models initially produced after coming into force of the proposed Regulations
(3) For all models

6.5 What are the procedures to measure the exhaust emissions?

The exhaust standards include the test procedures, fuels and calculations method set out in the CFR for those standards.

During a emission certification test, exhaust gases are sampled while the test engine is operated using a specified test cycle on a dynamometer. The exhaust gases receive specific component analysis determining concentration of pollutant. Emission concentrations are converted to weighted emission rates reported in grams per brake-kilowatt hour (g/kW-hr).

6.6 What are the alternative standards for niche Canadian products?

When less than 2,000 units of an handheld engine of a given model and model year are sold in Canada, the engine may conform to alternative standards described in section 10 of the Regulations instead of the exhaust emission standards set out in table 4 of section 90.103 of the CFR. These alternative standards are consistent with those available under the provisions for small volume engine families in the CFR.

For a class III or IV engine of the model year 2007 or earlier, the exhaust emission standards are set out in Table 1 of section 90.103 of the CFR applicable to an engine of the same class. For a class III or IV engine of the model year 2008 or later, the HC+NOx exhaust emission standards are set out in paragraph 90.203(*f*) of the CFR for the applicable class of engine and the CO emissions must not be greater than 805 g/kW-hr.

For a class V engine of the model year 2009 or earlier, the exhaust emission standards are set out in Table 1 of section 90.103 of the CFR applicable to an engine of the same class. For a class V engine of the model year 2010 or later, the HC+NOx exhaust emission standards are set out in paragraph 90.203(*f*) of the CFR and the CO emissions must not be greater than 603 g/kW-hr.

6.7 Why are there alternative standards for niche Canadian products?

The alternative standards described in section 6.6 of this document are provided to accommodate Canada-only niche products used by the forestry industry. The Department has concluded that allowing these products to meet alternative, less-stringent exhaust emission standards was the best option to keep these products available in Canada, considering their importance to the forestry sector and their small contribution to national air pollution.

6.8 What are the alternative exhaust standards for wintertime engines?

The exhaust emission standards include less stringent HC+NOx levels for engines in machines used exclusively in wintertime such as ice augers and

snowblowers. These engines are subject to the applicable CO standard. These alternative standards are aligned with those found in paragraphs 90.103(a)(4) and (5) of the CFR .

Snowblower engines can also meet alternative crankcase emission standards (please refer to section 6.12 of this document).

6.9 For how long must an engine conform to the exhaust emission standards?

An engine must conform to the exhaust emission standards throughout its "useful life". The useful life period is incorporated by reference from the CFR. Section 90.105 of the CFR states that a manufacturer can select one of three specified periods (Table 3).

The selection of the useful life duration must be supported by technical documentation. Longer useful lives, which entail a higher manufacturing cost are typically found in commercial equipment while home consumer products are often designed for shorter useful lives

Table 3: Useful life

engine class	Useful life category (hours)		
	C	B	A
I-A	50	125	300
I-B	125	250	500
I	125	250	500
II	250	500	1000
III	50	125	300
IV	50	125	300
V	50	125	300

6.10 What are the standards for a class I engine in 2005 and 2006?

As shown in Table 2, there are two exhaust emission standards for a class I engine of model years 2005 and 2006. The applicable exhaust emission standards is conditional on whether or not the engine is already in production on January 1, 2005. A class I engine already in production on the coming into force date does not have to meet the useful life requirements and there is no combined NMHC+NOx standard for that engine.

After model year 2007, all class I engines must meet the same exhaust emission standard throughout their useful lives.

These standards are aligned with those in the CFR.

6.11 When can an engine be classified as “handheld”?

The Regulations incorporate by reference the definition of handheld engines provided in paragraph 90.103(a)(1) of the CFR. An engine is subject to the handheld exhaust emission standards only if it meets at least one of the following requirements:

(1) the engine must be used in a machine that is carried by the operator throughout the performance of its intended function(s);

(2) the engine must be used in a machine that must operate multi-positionally, such as upside down or sideways to complete its intended function(s);

(3) the engine must be used in a machine for which the dry weight is under 14 kilograms, no more than two wheels are present on the machine, and at least one of the following attributes is also present:

- the operator must alternatively provide support or carry the machine throughout the performance of its intended function(s);
- the operator must provide support or attitudinal control throughout the performance of its intended function(s); and
- the engine must be used in a generator or a pump; or

(4) the engine must be used to power a one-person auger with a dry weight under 20 kilogram.

The weight limit defined in (3) or (4) may be exceeded if the machine exceeds the weight limit by no more than the extent necessary to allow for incremental weight of a four-stroke engine or the incremental weight of two-stroke engine having enhanced emission control.

6.12 What are the requirements for crankcase emissions?

Under subsection 11(1) of the Regulations, the crankcase of an engine must be closed.

Subsection 11(2) of the Regulations allows for an open crankcase for an engine designed to power a snowblower if the combination of exhaust and crankcase emissions meet the applicable standard.

6.13 What is an adjustable parameter?

Subsection 12(1) of the Regulations defines an adjustable parameter as “a device, system or element of design that is physically capable of being adjusted to affect emissions or engine performance during emission testing or in-use operation, but does not include devices, systems or elements of design that are permanently sealed by the engine manufacturer or that are inaccessible with the use of ordinary tools”.

Engines with adjustable parameters must comply with the applicable standards regardless of the adjustment of these parameters. For example, if there is an adjustable screw on an engine carburetor, this engine must meet the exhaust emission standards regardless of the adjustment (fully, partly, or not tightened) of the screw.

6.14 Is it required for an engine covered by an EPA certificate of conformity and sold concurrently in Canada and the U.S. to meet the Canadian emission standards?

Under subsection 14(2) of the Regulations, an engine covered by an EPA certificate of conformity and sold concurrently in Canada and the U.S. is deemed to conform to the emission standards (i.e., sections 9 to 12 of the Regulations) if this engine meets all requirements set out in the EPA certificate of conformity. All other requirements of the Regulations (such as evidence of conformity, importation documents, notice of defect, etc.) must be met.

It is possible for the EPA to issue a certificate of conformity for an engine with emissions levels above the applicable standard. The EPA emission program incorporates an optional averaging, banking and trading program that allows manufacturers to certify engines to a level less stringent than the prescribed standard as long as the increased emissions are offset, on a sales weighted basis, by engines certified better than the standard. Engines certified under the averaging provisions cannot exceed a prescribed maximum emission level.

6.15 Is it necessary to have exactly the same engine sold concurrently in Canada and in the U.S.?

No. Under subsection 14(1) of the Regulations, an engine sold in Canada that shares all the features (used by the EPA to classify engines into engine families) with an engine in an engine family covered by an EPA certificate and sold in the U.S. in the same model year may conform to the emission standards referred to in the relevant EPA certificate, instead of standards set out in the Regulations. The engine sold in Canada must not have any features that could cause it to have a higher level of emissions than the engine family sold in the U.S.

7. EVIDENCE OF CONFORMITY

Sections 16 to 18 of the Regulations identify the records respecting the evidence of conformity that must be provided upon request.

For an engine that is covered by an EPA certificate of conformity and that is sold concurrently in Canada and in the U.S., the evidence of conformity is

(1) a copy of the EPA certificate of conformity;
(2) a document demonstrating that the engine is sold concurrently in Canada and in the U.S.;
(3) a copy of the records submitted to the EPA when applying to obtain a certificate a conformity; and
(4) the U.S. Environmental Protection Agency engine information label affixed to the engine.

For an engine that is not covered by an EPA certificate of conformity or that is not sold concurrently in Canada and in the U.S., the evidence of conformity shall be obtained and produced in a form and manner that is satisfactory to the Minister. Please refer to section 7.3 of this guidance document.

7.1 What records could satisfy the requirement of demonstrating that an engine is sold concurrently in Canada and the U.S.?

Paragraph 16(b) of the Regulations requires a document demonstrating that an engine covered by an EPA certificate is sold concurrently in Canada and the U.S. Examples of evidence include:

(1) a copy of an invoice for the sale of an engine to a person in the U.S.;
(2) a copy of an invoice for the sale of a machine containing the engine to a person in the U.S. accompanied by documentation showing that the engine was installed in the machine; or
(3) other evidence sufficient to demonstrate concurrent sales of engines in the U.S. and Canada.

7.2 When must the evidence of conformity be submitted?

A *company* is required to provide the evidence of conformity in respect of any engine only upon request from the Minister. This request can apply to engines manufactured in the eight years preceding the request and evidence of conformity must be provided in either official language within 40 days after the request is delivered. If the evidence of conformity must be translated from a language other than French or English, the *company* has 60 days to provide the evidence.

While the Regulations do not oblige a *company* to maintain these records, there is an obligation to make them available on request. Accordingly, *companies* are urged to ensure that the necessary arrangements are in place to fulfill this obligation.

7.3 What is the procedure to provide evidence of conformity "in a form and manner satisfactory to the Minister" for the engines referred to in section 17 of the Regulations?

For an engine that is not covered by an EPA certificate of conformity or sold concurrently in Canada and in the U.S., section 17 of the Regulations states that evidence of conformity must be obtained and produced in a form and manner satisfactory to the Minister. The evidence of conformity in this situation must be submitted prior to importation of the subject engine.

Figure 3 illustrates the procedure to provide evidence of conformity "in a form and manner satisfactory to the Minister" for the engines referred to in section 17 of the Regulations.

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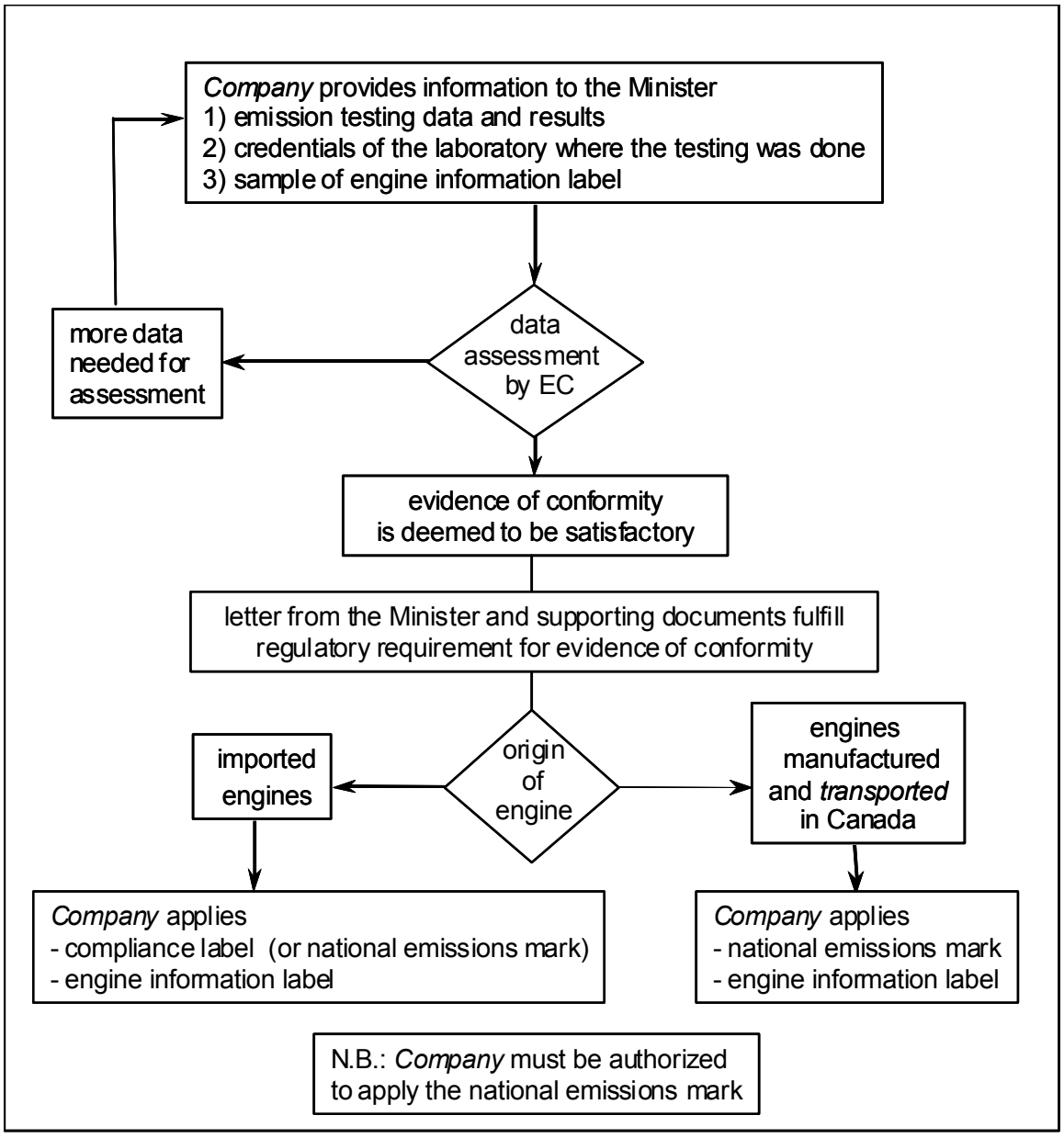

Figure 3: Procedure for Canada-only engines

The Department expects that *companies* obtain and produce evidence of conformity that is comparable to that specified in paragraphs 15(c) and 15(d) for EPA certified engines. A *company* should therefore obtain and produce the following evidence:

(1) results of the emissions testing of the Canada-only engine obtained using the applicable procedures set out in the CFR;
(2) data required to repeat this testing;

(3) credentials of the laboratory where the testing was performed, especially experience in obtaining test results used in support of certification by the EPA;
(4) sample of an engine information label.

Test results and data required to repeat the testing may be presented in the same format used when applying to the EPA for a certificate of conformity.

The Department will expect an information label to be affixed in the same location specified in the Regulations. This engine information label should include:

(1) a statement of compliance, such as “this engine conforms to all applicable standards under the Canadian Off-Road Small Spark-Ignition Engine Emission Regulations” or the national emissions mark if the *company* has been authorized to apply it; and
(2) the name of *company*, the model year, and sufficient information to demarcate the engine for which the evidence of conformity has been assessed to be satisfactory.

To save space on this label, a *company* may use the code system shown in Table 4 instead of providing in full the information listed under item (2). This code is based on the engine family identification developed by the EPA.

Table 4
Identification code for Canada-only engines

Number of characters	Columns	Description
1	1	Model year identified until 2009 by the last number of the model year, i.e. 5 for model year 2005. Codes to match those of the EPA for model 2010 and later when these are known.
3	2-4	Codes identifying the *company*. A company may use a) the identification number assigned by the Minister if authorized to apply the national emissions mark; b) the character sequence used by the EPA to identify the *company*, if applicable; or c) if the *company* cannot use a) or b), a sequence of three characters.
1	5	A letter code identifying the Regulations V on-road S small spark-ignition R recreational C compression -ignition L large spark-ignition
4	6-9	Engine displacement in liters (e.g. 05.7 where the decimal point counts as a digit and the leading zero is a space) or in cubic inches (e.g. 0350, 0097). For large displacement engines, the displacement may be entered as XX.X (e.g. 12.1). Small engines may be entered as a .XXX (e.g., .072, 0.07, 00.7). In all cases the displacement will be read in liters if a decimal point is entered and in cubic inches if there is no decimal point.
3 or more	10-?	Sequence characters. Use any combination of characters to provide a unique identification for the engine model or family.

8. IMPORTING AN ENGINE

Only engines that comply with the Regulations are eligible for importation.

Under section 19 of the Regulations, any *company* importing an engine shall submit a declaration at a customs office. This declaration must provide

(a) the name and address of the importer;
(b) the business number assigned to the *company*;
(c) for a loose engine, the name of its manufacturer, its model and model year;
(d) for a machine, the name of its manufacturer, the make, model and type of the machine ;
(e) the date of importation; and
(f) a statement that the engine bears the national emissions mark or that the *company* is able to produce the evidence of conformity or complies with the Canadian emission standards.

Under section 21 of the Regulations, any engine that is imported by a *person who is not a company* shall be labeled with:

(a) the national emissions mark;
(b) the EPA engine information label; or
(c) a label showing that the engine conformed to the emission standards of the California Air Resources Board (CARB) in effect at the time of its manufacture.

The presence of one of the above identified labels on the engine is normally sufficient evidence to indicate that the engine conforms to Canadian emissions standards at the time of manufacture. There is no explicit importation documentation requirement for engines imported by a *person that is not a company*.

8.1 What is the business number required in paragraph 19(1)(b) of the Regulations?

The business number (BN) is a numbering system that simplifies and streamlines the way businesses deal with the federal government. It is assigned by the Canada Customs and Revenue Agency to uniquely identify business entities and must be supplied on customs documents.

More information on the business number is available at http: http://www.ccra-adrc.gc.ca/tax/business/busregistration-e.html

8.2 Is there a special form for the importation declaration specified in section 18 of the Regulations?

No. The required declaration can be provided by a *company* in three different ways.

(1) The information required typically corresponds to the information provided on the commercial invoice required at importation. The *company* may add the statement of conformity required under paragraph 19(1)(f) of the Regulations onto their commercial invoice.

(2) If eligible, the *company* may provide the bulk declaration described in subsection 19(2) of the Regulations.

(3) The *company* may submit the declaration on a separate form provided by the *company*.

8.3 Is there any suggested wording for the statement under paragraph 19(1)(f) of the Regulations?

Yes. This wording may be used: “All engines in this shipment conform to the Canadian Off-Road Small Spark-Ignition Engine Emission Regulations”.

8.4 Who is eligible to sign the import declaration as the “duly authorized representative” of the *company*?

“Duly authorized representative” means a person with written authority to act on behalf of the *company*. Any authorized employee of the *company* or a separate commercial entity under contract with the *company*, such as a customs broker, can sign documents as the duly authorized representative of the *company*.

8.5 What is the bulk declaration mentioned in subsection 19(2)?

Any *company* that imports 500 or more prescribed engines in a calendar year may provide the information required under subsection 19(1) of the Regulations via a bulk declaration.

9. OTHER OBLIGATIONS

9.1 To provide maintenance instructions

Under section 15 of the Regulations, a *company* shall ensure that written instructions for emission-related maintenance are provided to the first retail purchaser of every engine or machine and are consistent with the maintenance instructions set out in the CFR. The instructions must be provided in English, French or both official languages, as requested by the purchaser.

9.2 Notice of defect

A *company* shall, on becoming aware of a defect in the design, construction or functioning of the engine that affects or is likely to affect its compliance with a prescribed standard, cause notice of defect to be given.

The expression “on becoming aware of a defect” in subsection 157(1) of CEPA 1999 can be interpreted as meaning, for an engine covered by EPA

certificate, when the *company* is aware that the criteria under which a manufacturer must file a defect information report with the EPA as described in subsection 90.803(a) of the CFR have been met.

Subsection 26(1) of the Regulations describes the information that must be provided in the notice of defect. The notice must be given to the Minister, to each person who has obtained such engine from the *company* and to each current owner of such engine.

Given the nature of the small spark-ignition engine and machine market, the Minister may take advantage of the flexibility provided by subsection 157(4) of CEPA 1999 regarding issuing notice to current owners. The Minister may order that the notice be provided by publication in daily newspapers or in an alternative medium or, if the circumstances warrant, order that the current owners need not be notified. The notice of defect provided to the Minister requires a description of the means available to the *company* to contact the current owner of each affected engine.

Within 60 days after a notice of defect has been given, the *company* must submit to the Minister an initial report containing the information described in subsection 26(2) of the Regulations. Unless the Minister directs otherwise, the *company* must also provide a report respecting the defect and its correction not later than 24 months after giving a notice of defect.

Under subsection 157(3) of CEPA 1999, a *company* is not required to cause notice of defect to be given if a relevant notice has already been given in Canada by another person (e.g., the engine manufacturer) for the same defect.

9.3 Obligation to provide an engine

Under section 159 of CEPA 1999, upon request from the Minister, a *company* shall make available for testing any engine that was used in tests conducted in order to establish information submitted as evidence of conformity or an equivalent engine. The Minister will defray the transportation cost and pay the rental rate set in section 23 of the Regulations. The annual rental rate is 21% of the manufacturer's suggested retail price of the engine, prorated on a daily basis for each day the engine is made available.

10. SPECIAL CASES OF OFF-ROAD SMALL SPARK-IGNITION ENGINES

10.1 Engines imported in Canada solely for purposes of exhibition, demonstration, evaluation or testing

Under paragraph 155(1)(a) of CEPA 1999, an engine imported into Canada solely for purposes of exhibition, demonstration, evaluation or testing does not have to meet with the requirements of the Regulations if a declaration signed by the person importing the engine or their duly authorized representative is submitted at a customs office. Section 20 of the Regulations specify that the declaration must contain:

(1) the name and street address and, if different, the mailing address of the importer;
(2) the business number of the importer;
(3) in respect of an engine that is not installed in or on a machine, the name of the manufacturer and the model and model year of the engine
(4) in respect of a machine, the name of the manufacturer and the make, model and type of the machine;
(5) the date on which the engine is imported;
(6) a statement that the engine will used in Canada solely for purposes of exhibition, demonstration, evaluation or testing; and
(7) the date on which the engine will be removed from Canada or destroyed.

10.2 Engine in transit through Canada, from a place outside Canada to another place outside Canada

Under paragraph 155(1)(b) of CEPA 1999, an engine in transit through Canada, from a place outside Canada to another place outside Canada does not have to meet with the requirements of the Regulations if it is accompanied by written evidence that the engine will not be sold or used in Canada.

10.3 Engine imported exclusively for use by a visitor to Canada

Under paragraph 155(1)(c) of CEPA 1999, an engine imported exclusively for use by a visitor to Canada or by a person passing through Canada to another country does not have to meet with the requirements of the Regulations.

10.4 Incomplete engine

Under section 22 of the Regulations, an incomplete engine can be imported by a *company* when a declaration is submitted at a customs office. The declaration must be signed by a duly authorized representative of the *company* and must contain the following:

(a) the information described in paragraphs 19(1) (a) to (e) of the Regulations;

(b) a statement from the engine manufacturer that the engine will, when completed in accordance to the instructions provided by the manufacturer, conform to the prescribed standards; and

(c) a statement from the *company* that the engine will be completed in accordance to the engine manufacturer's instructions.

10.5 Replacement engine

Under section 13 of the Regulations, a replacement engine is "an engine designed exclusively to replace an engine in a machine for which no current model year engine with the physical or performance characteristics necessary for the operation of the machine exists".

A replacement engine shall conform to standards that may be different from those prescribed in sections 9 to 12 of the Regulations. Figure 4 illustrates to what standards the replacement engine must conform.

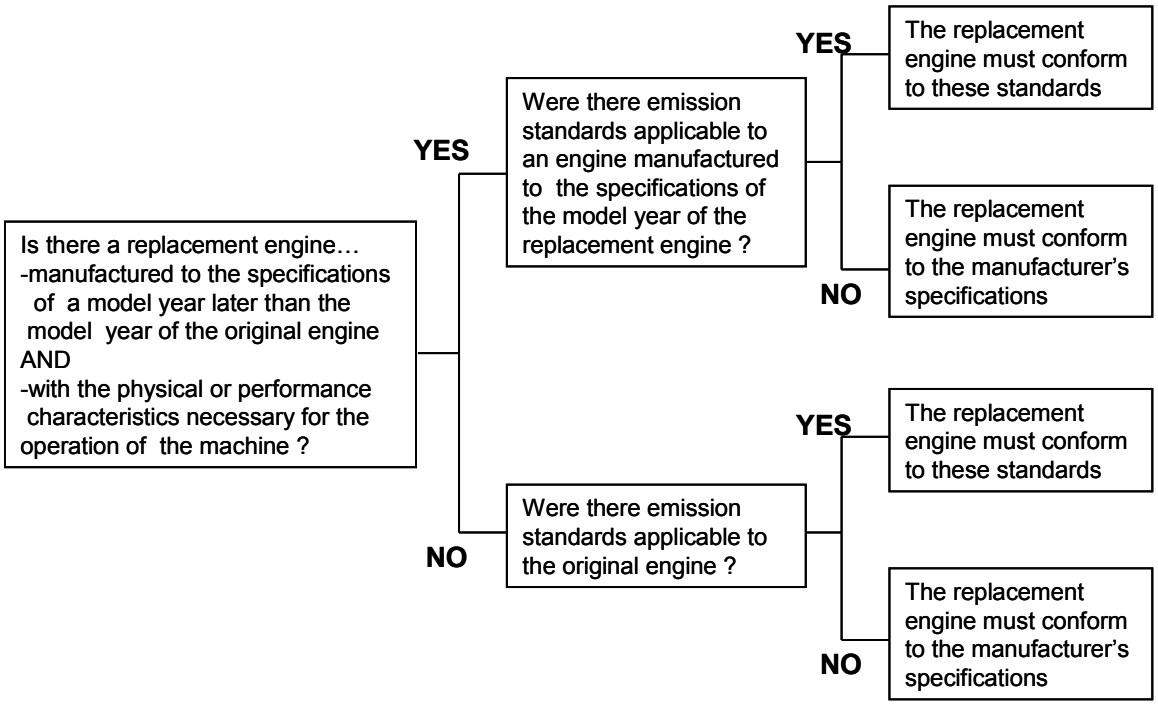

Figure 4: Standards applicable to a replacement engine

A label must be applied to a replacement engine. Under subsection 13(3) of the Regulations, this label must

(a) set out in both official language that the engine is a replacement engine and meets all the requirements set out for the national emissions mark; or

(b) meet the requirements set out in paragraph 90.1003(b) (5) of the CFR.

10.6 Engine for which the Governor-in-Council has granted an exemption

A *company* may apply to the Governor in Council to be granted an exemption from any standards prescribed under the Regulations. Under section 156 of CEPA 1999, an exemption from any prescribed standards will be granted only if, in the opinion of the Governor in Council, conformity with that standard would

(a) create substantial financial hardship for the *company*;

(b) impede the development of new features for safety, emission monitoring or emission control that are equivalent or superior to those that conform to prescribed standards; or

(c) impede with the development of new kinds of engines or engine components.

Under subsection 156(4) of CEPA 1999, an exemption for financial hardship may not be granted if the annual world production of engines manufactured by the *company* or by the manufacturer of the engine that is the subject of the application for exemption exceeded 10,000 engines or if the annual total number of engines manufactured for, or imported into, the Canadian market exceeded 1,000 engines.

Section 24 of the Regulations describes the information to be provided to the Minister when applying for an exemption and section 25 describes the label to be applied to an engine for which an exemption has been granted.

11. COMPLIANCE AND ENFORCEMENT

Manufacturers and importers are responsible for ensuring that their products comply with the Regulations and are required to produce the evidence of conformity upon request.

Environment Canada administers a comprehensive program to verify compliance with federal emission standards. The program includes:

- authorizing and monitoring use of the national emissions mark;
- reviewing evidence of conformity;

- registering notices of defect affecting emission controls;
- inspection of test engines and emission-related components; and
- laboratory emission tests of sample new engines that are representative of products offered for sale in Canada.

If an engine is found not to comply with the Regulations, the manufacturer or importer is subject to the provisions of CEPA 1999. In this situation, the normal course of events is to perform sufficient engineering assessment to determine if a notice of defect should be issued.

Environment Canada's Compliance and Enforcement Policy will be applied when verifying compliance with the Regulations. The policy sets out the range of possible responses to alleged violations: warnings, environmental protection compliance orders, ticketing, ministerial orders, injunctions, prosecution and environmental protection alternative measures (which are an alternative to a court prosecution after the laying of charges for a CEPA 1999 violation). In addition the policy explains when Environment Canada will resort to civil suits by the Crown for recovery. A copy of this policy is available at www.ec.gc.ca/CEPARegistry/enforcement/CandEpolicy.pdf.

Whenever a possible violation of the Regulations is identified, enforcement officers may carry out inspections, investigations or both. Alleged violations may be identified by Environment Canada's technical personnel, through information transmitted by the Canada Customs and Revenue Agency or though complaints received from the public. Enforcement activities may also include inspections by enforcement officers at Canada's international borders.

When, following an inspection or an investigation, a CEPA enforcement officer discovers an alleged violation, the officer will choose the appropriate enforcement action based on the following criteria:

- Nature of the alleged violation: This includes consideration of the seriousness of the harm or potential harm to the environment, the intent of the alleged violator, whether it is a repeat violation, and whether an attempt has been made to conceal information or otherwise subvert the objectives and requirements of CEPA 1999.

- Effectiveness in achieving the desired result with alleged violator: The desired result is compliance with CEPA 1999 within the shortest possible time and with no further repetition of the violation. Factors to be considered include the violator's history of compliance, willingness to cooperate with enforcement officers, and evidence of corrective actions already taken.

- Consistency in enforcement: Enforcement officers will consider how similar situations have been handled in determining the measures to be taken to enforce CEPA 1999.