

Note: Amendments are proposed for Chapter #1 of the EASR Publication and have been underlined below. The proposed amendments to O. Reg. 1/17 (Registration Under Part II.2 of the Act – Activities Requiring Assessment of Air Emissions) to be made under the EPA include the addition of eligible combustion turbines. As such, new in-stack emission limits are proposed to be included in Chapter 1 of the EASR publication for those combustion turbines. Proposed changes to Chapter 1 are shown as underlined below.

Chapter 1: In-stack Limits for Combustion Equipment

General

1. (1) For the purposes of this Chapter, an amount (or concentration) of nitrogen oxides shall be calculated in accordance with the following formula:

$$A = (B \times 1.53) + C$$

where,

A = the amount (or concentration) of nitrogen oxides,

B = the amount (or concentration) of nitric oxide,

C = the amount (or concentration) of nitrogen dioxide.

(2) In this Chapter, reference to a concentration, as it relates to requirements for a small wood-fired combustor, is a reference to a concentration, corrected to 11 percent oxygen on a dry basis at reference conditions of temperature of 25 degrees Celsius and pressure of 101.3 kilopascals in the flue gas.

(3) In this Chapter, reference to a concentration, as it relates to requirements for a combustion turbine, is a reference to a concentration, corrected to 15 percent oxygen on a dry basis at reference conditions of temperature of 25 degrees Celsius and pressure of 101.3 kilopascals in the flue gas.

Heaters and Boilers - Emission Intensity Rates

2. An emission intensity rate referred to in paragraph 6 of subsection 11 (1) and paragraph 8 of subsection 13 (1) of the Regulation in respect of nitrogen oxides for a boiler or heater with an energy input capacity set out in Column 1 of Table 1 that uses a type of fuel set out opposite the capacity in Column 2, is the emission intensity rate set out in Column 3.

Table 1- Emission Intensity Rates for Heaters and Boilers

Item	Column 1: Energy input capacity of the boiler or heater (gigajoules per hour)	Column 2: Type of fuel used in boiler or heater	Column 3: Maximum nitrogen oxides emission intensity rate (grams per gigajoule)
1.	>10.5 ≤ 105	Gas	26
2.	>105	Gas	40
3.	>10.5 ≤ 105	Distillate oil	40
4.	>105	Distillate oil	50
5.	>10.5	Residual oil with less than 0.35% nitrogen	90
6.	>10.5 ≤ 105	Residual oil with equal to or greater than 0.35% nitrogen	110
7.	>105	Residual oil with equal to or greater than 0.35% nitrogen	125

Electricity Generation Engines - Emission Intensity Rates

3. An emission intensity rate referred to in paragraph 6 of subsection 11 (1) and paragraph 8 of subsection 13 (1) of the Regulation in respect of a contaminant set out in Column 1 of Table 2 that is discharged from an electricity generation engine is the emission intensity rate set out in Column 2.

Table 2 – Emission Intensity Rates for Electricity Generation Engines

Item	Column 1: Contaminant	Column 2: Intensity Rate (kg/MW-hr)
1.	Carbon Monoxide	3.5
2.	Non-methane hydrocarbons	0.19
3.	Nitrogen oxides	0.40
4.	Particulate Matter	0.02

Small wood-fired combustors - Emission Limits

4. A concentration referred to in paragraph 6 of subsection 11 (1) and paragraph 8 of subsection 13 (1) of the Regulation in respect of a contaminant set out in Column 1 of Table 3 that is discharged from a small wood-fired combustor is the limit set out in Column 2.

Table 3 – In-stack Emission limits for small wood-fired combustors

Item	Column 1: Contaminant	Column 2: Emission Limit
1.	Carbon Monoxide	400 ppmv (averaged over a 24-hour period)
2.	Particulate matter	75 mg/Rm ³

Combustion Turbines – Emission Limits

5. A concentration referred to in paragraph 6 of subsection 11 (1) and paragraph 8 of subsection 13 (1) of the Regulation in respect of nitrogen oxides that are discharged from a combustion turbine according to the application set out in Column 1 of Table 4 that has a maximum power output capacity set out in Column 2 and a thermal efficiency set out in Column 3 is the limit set out in Column 4.

Table 4 – In-stack Emission limits for Combustion Turbines

<u>Item</u>	<u>Column 1:</u> <u>Application of the</u> <u>Combustion Turbine</u>	<u>Column 2:</u> <u>Maximum power</u> <u>output capacity</u> <u>(Megawatts)</u>	<u>Column 3:</u> <u>Thermal</u> <u>efficiency</u> <u>(percent)</u>	<u>Column 4:</u> <u>Nitrogen Oxides</u> <u>Emission limit (parts</u> <u>per million by volume)</u>
<u>1.</u>	<u>Mechanical drive</u>	<u>< 4</u>	<u>< 60</u>	<u>75</u>
<u>2.</u>	<u>Mechanical drive</u>	<u>< 4</u>	<u>≥ 60</u>	<u>100</u>
<u>3.</u>	<u>Electricity generation</u>	<u>< 4</u>	<u>< 60</u>	<u>42</u>
<u>4.</u>	<u>Electricity generation</u>	<u>< 4</u>	<u>≥ 60</u>	<u>60</u>
<u>5.</u>	<u>Mechanical drive or</u> <u>electricity generation</u>	<u>≥ 4 and < 25</u>	<u>< 60</u>	<u>25</u>
<u>6.</u>	<u>Mechanical drive or</u> <u>electricity generation</u>	<u>≥ 4 and < 25</u>	<u>≥ 60</u>	<u>34</u>

6. A concentration referred to in paragraph 6 of subsection 11 (1) and paragraph 8 of subsection 13 (1) of the Regulation in respect of carbon monoxide that is discharged from

a combustion turbine for all applications set out in Table 4 is the limit of 50 parts per million by volume.