(Garuda Emblem)

Notification of Ministry of Industry

Re: Industrial Emission Standard

B.E. 2548 (2005)

By the virtue of clause 16 of the Ministerial Regulation No. 2 (B.E. 2535 (1992)) issued pursuant to the Factory Act B.E. 2535(1992) which contains some provisions concerning the limitation of the people rights and liberties that is permissible by the provisions of section 29 together with section 35, section 48 and section 50 of the Constitution of the Kingdom of Thailand, the Minister of Industry hereby issues the Ministerial Notification as follows:

Article 1: The Notification of Ministry of Industry No. 2 B.E. 2536 (1993) dated 20th July B.E. 2536 (1993) and the Notification of Ministry of Industry No. 9 B.E. 2538 (1995), dated 6th September B.E. 2538 (1995), regarding industrial emission standard, shall be repealed.

Article 2: In this Notification

"Fuel combustion" means a reaction process between fuel substances and oxygen, which generates heat energy such as fuel combustion of boiler, fuel combustion of cement kiln, metal and ore smelting, industrial waste incineration, etc.

"Biomass fuel" means fuels produced from organic substance or living things that includes products from agriculture, livestock, and forestation; for example, firewood, woodchip, husk, straw, baggasse, stem and leaves of sugar cane, palm fiber, palm shell, palm cluster, coconut shell, plant's residue, animal's dung, biogas, sludge, or waste from agricultural product processing factory, etc.

Article 3: Stack emission from factory shall not exceed the prescribed values for each parameter as follows:

Parameter	Source of emission	Emission Standard	
		Without fuel combustion	With fuel combustion
1. Total Suspended Particulate (mg/m^3)	Heat generating source using the following fuels:		
	- Fuel oil	-	240
	- Coal	-	320
	- Biomass	-	320
	- Other fuels	-	320
	Smelting, molding and casting, rolling and drawing, and/or producing aluminum	300	240
	General production	400	320
2. Antimony (mg/m^3)	General production	20	16
3. Arsenic (mg/m^3)	General production	20	16
4. Copper (mg/m^3)	General production	30	24
5. Lead (mg/m^3)	General production	30	24
6. Mercury (mg/m^3)	General production	3	2.4
7. Chlorine (mg/m^3)	General production	30	24
8. Hydrogen chloride (mg/m^3)	General production	200	160
9. Sulfuric acid (ppm)	General production	25	-
10. Hydrogen sulfide (ppm)	General production	100	80
11. Carbon monoxide (ppm)	General production	870	690
12. Sulfur dioxide (ppm)	Heat generating source using the following fuels:		
	- Fuel oil	-	950
	- Coal	-	700
	- Biomass	-	60
	- Other fuels	-	60
	General production	500	-

Parameter	Source of emission	Emission Standard	
		Without fuel combustion	With fuel combustion
13. Oxides of nitrogen (ppm)	Heat generating source using the following fuels:		
	- Fuel oil	-	200
	- Coal	-	400
	- Biomass	-	200
	- Other fuels	-	200
14. Xylene (ppm)	General production	200	-
15. Cresol (ppm)	General production	5	-

Article 4: Measurement of emission from a stack must follow the following methods:

(1) Total Suspended Particulate

- Determination of Particulate Emission from Stationary Sources of U.S. EPA or other methods approved by DIW.

(2) Antimony, Arsenic, Coppy, Lead and Mercury

- Determination of Metals Emissions from Stationary Sources of U.S. EPA or other methods approved by DIW.

(3) Chlorine and Hydrogen Chloride

- Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Non-Isokinetic, or Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic, of U.S. EPA or other methods approved by DIW.

(4) Sulfuric Acid

- Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources, of U.S. EPA or other methods approved by DIW.

(5) Hydrogen Sulfide

- Determination of Hydrogen Sulfide, Carbonyl Sulfide and Carbon Disulfide Emissions from Stationary Sources, of U.S. EPA or other methods approved by DIW.

(6) Carbon Monoxide

- Determination of Carbon Monoxide Emissions from Stationary Sources, of U.S. EPA or other methods approved by DIW.

(7) Sulfur Dioxide

- Determination of Sulfur Dioxide Emissions from Stationary Sources, Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources, of U.S. EPA; or other methods approved by DIW.

(8) Nitrogen Oxide as Nitrogen Dioxide

- Determinatin of Nitrogen Oxide Emissions from Stationary Sources, of U.S. EPA or other methods approved by DIW.

(9) Xylene and Cresol

- Measurement of Gaseous Organic Compound Emission by Gas Chromatography, of U.S. EPA or other methods approved by DIW.

Article 5: Reference conditions are as follows:

(1) Without fuel combustion: at 1 ATM or 760 mmHg, temperature of 25 degree Celsius, on dry basis, and having volume of excess oxygen at actual condition.

(2) With fuel combustion: at 1 ATM or 760 mmHg, temperature of 25 degree Celsius, on dry basis, and having volume of excess air at 50% or excess oxygen for combustion at 7%.

Announced on the 4th February 2005

Sign ……..

(Mr. Pongsak Raktapongpaisan)

Minister of Industry

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