



Embassy of the Republic of the Philippines
Nairobi, Kenya

Note No. BVM- 758 -2015

The Permanent Mission of the Republic of the Philippines in Nairobi presents its compliments to the United Nations Environment Programme (UNEP) and has the honor to forward a letter from Mr. Juan Miguel Cuna, Assistant Secretary and Director-Environmental Management Bureau of the Philippines' Department of Environment and Natural Resources submitting its comments on Article 8 of the Minamata Convention on Mercury.

The Permanent Mission of the Republic of the Philippines in Nairobi avails itself of this opportunity to renew to the United Nations Environment Programme (UNEP) the assurances of its highest consideration.

Nairobi, 27 August 2015

United Nations Environment Programme
NAIROBI





Republic of the Philippines
 Department of Environment and Natural Resources
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AUG 11 2015

Hon. Jesus R. S. Domingo
 Assistant Secretary
 Office of the United Nations and
 Other International Organizations
 DEPARTMENT OF FOREIGN AFFAIRS
 2330 Roxas Blvd., Pasay City

Dear ASec Domingo:

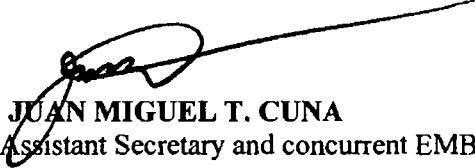
This has reference to your letter dated 27 July 2015 (Reference Number: L-2-0406-2015) transmitting a copy of a message from the Interim Secretariat of the Minamata Convention on Mercury requesting comments on Article 8 of the Convention.

Please find attached our comments especially on the potential usefulness and applicability of the draft guidance on best available techniques and best environmental practices (BAT/BEP) for controlling and, where feasible, reducing emissions of mercury and mercury compounds to the atmosphere to our national circumstances.

With regard to the collation of Certificates of Concurrence for the Philippines' ratification of the Convention, we have, so far, received the Concurrence from the Department of Health (DOH) and we are still awaiting those from the Departments of Labor and Employment; Trade and Industry; Science and Technology; Finance; Agriculture; and Energy.

Thank you.

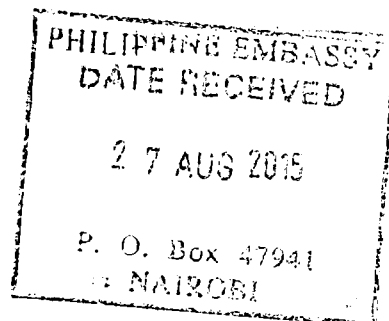
Very truly yours,


ATTY. JUAN MIGUEL T. CUNA
 DENR Assistant Secretary and concurrent EMB Director

Department of Environment and
 Natural Resources
 ENVIRONMENTAL MANAGEMENT BUREAU
 Office of the Director

Letter

15.08.11*11:1246*0045



Call for Comments issued on behalf of the co-chairs of the group of technical experts on Air Emissions under the Minamata Convention on Mercury

1. Legal Bases

Mercury is a regulated air pollutant under Article 3, Section 19 "Pollution from Stationary Source" (Attachment "1") under Republic Act 8749 also known as the Philippine Clean Air Act of 1999. The prescribed concentration or emission standard/limit from any source (trade, industry and fuel-burning equipment or industries is **5milligrams as elemental mercury (Hg) per Normal Cubic Meter (mg/Ncu.m)** measured at the stack/chimney or at the point of emission. Same emission standards standard is prescribed under Table 2 "National Emission Standards for Source Specific Air Pollutants (NESSSAP), Part II, Rule XXV, Section 1 of DAO 2000-81 "Implementing Rules and Regulations of RA 8749" (Attachment "2") prescribes an emission limit of **0.05 mg/Ncu.m for Mercury and its compounds for Treatment Facilities Using Non-burn Technologies.**

Pursuant to Rule VI "Definition of Terms", Section 1, DAO 2000-81, Best Available Control Technology (BACT) is defined as "approaches, techniques or equipment which when used, result in lower air emissions but in a cost-effective manner. BACT results in lower emission rates than those specified in the NESSSAP". Under Rule X "New/Modified Sources in Attainment areas", Section I, DAO 2000-81" (Attachment "3"), any new/modified sources in addition to complying with the NESSSAP, shall install and operate BACT for each regulated air pollutant with the potential to be emitted in quantities equal to or greater than 100tons/year. It is further stated that selection of BACT will be made in consultation and with the EMB. Under Rule VI, Section, new source is defined as any plant, equipment, installation in any trade, business or establishment which generates, emits or disposes air emissions into the atmosphere and constructed after the effectivity date of the DAO 2000-81 (Nov 25, 2000).

Furthermore, Section 11 "Air Quality Control Techniques" (Attachment "4"), mandates the DENR to issue and revise information on air pollution control techniques such as (1) Best Available Technology and alternative methods of prevention, management and control of air pollution; (2) Best available technology *economically achievable* which shall refer to the technological basis/standards for emission limits applicable to existing, direct industrial emitters of non-conventional and toxic pollutants; and (3) alternative fuels, processes and operating methods which will result in the elimination or significant reduction of emissions.

2. Comments

2.1 Under the RA 8749 and DAO 2000-81 control of mercury emission from stationary sources or point sources is already in place since year 2000. As a general policy, the DENR-EMB does not require or recommend the use of any air pollution control technology but rather compliance with the prescribed NESSSAP measured at the point of emission before it is released to the atmosphere/ambient air. Therefore, Article 8 of the Minamata Convention which requires any point source (new and existing) to use BAT and BEP to control, where feasible, reduce HG emissions runs contrary to our national policy; and

2.2 Consistent with paragraph 2 above, we can only require the installation and operation of BACT to new/modified sources for each regulated air pollutant with the potential to be emitted in quantities equal to or greater than **100tons/year**.

2.3 The emission standards/limits of 5 mg/Ncu.m for Hg is applicable to any point source except for Treatment Facilities Using Non-burn Technologies which is 0.05 mg/Ncu.m (Mercury and its compounds).

Section 15. *Air Pollution Research and Development Program.* - The Department, in coordination with the Department of Science and Technology (DOST), other agencies, the private sector, the academe, NGOs and POs, shall establish a National Research and Development Program for the prevention and control of air pollution. The Department shall give special emphasis to research on and the development of improved methods having industry-wide application for the prevention and control of air pollution.

Such a research and development program shall develop air quality guideline values and standards in addition to internationally-accepted standards. It shall also consider the socio-cultural, political and economic implications of air quality management and pollution control.

Article 2

Air Pollution Clearances And Permits For Stationary Sources

Section 16. *Permits.* - Consistent with the provisions of this Act, the Department shall have the authority to issue permits as it may determine necessary for the prevention and abatement of air pollution.

Said permits shall cover emission limitations for the regulated air pollutants to help attain and maintain the ambient air quality standards. These permits shall serve as management tools for the LGUs in the development of their action plan.

Section 17. *Emission Quotas.* - The Department may allow each regional industrial center that is designated as special airshed to allocate emission quotas to pollution sources within its jurisdiction that qualify under an environmental impact assessment system programmatic compliance program pursuant to the implementing rules and regulations of Presidential Decree No. 1586.

Section 18. *Financial Liability for Environmental Rehabilitation.* - As part of the environmental management plan attached to the environmental compliance certificate pursuant to Presidential Decree No. 1586 and rules and regulations set therefor, the Department shall require program and project proponents to put up financial guarantee mechanisms to finance the needs for emergency response, clean-up or rehabilitation of areas that may be damaged during the program or project's actual implementation. Liability for damages shall continue even after the termination of a program or project, where such damages are clearly attributable to that program or project and for a definite period to be determined by the Department and incorporated into the environmental compliance certificate.

Financial liability instruments may be in the form of a trust fund, environmental insurance, surety bonds, letters of credit, as well as self-insurance. The choice of the guarantee instrument or combinations thereof shall depend, among others, on the assessment of the risks involved. Proponents required to put up guarantee instruments shall furnish the Department with evidence of availment of such instruments.

Article 3

Pollution From Stationary Sources

Section 19. *Pollution From Stationary Sources.* - The Department shall, within two (2) years from the effectivity of this Act, and every two (2) years thereafter, review, or as the need therefor arises, revise and publish emission standards, to further improve the

emission standards for stationary sources of air pollution. Such emission standards shall be based on mass rate of emission for all stationary sources of air pollution based on internationally-accepted standards, but not be limited to, nor be less stringent than such standards and with the standards set forth in this section. The standards, whichever is applicable, shall be the limit on the acceptable level of pollutants emitted from a stationary source for the protection of the public's health and welfare.

With respect to any trade, industry, process and fuel-burning equipment or industrial plant emitting air pollutants, the concentration at the point of emission shall not exceed the following limits:

Pollutants	Standard Applicable to Source	Maximum Permissible Limits (mg/NCM)	Methods of Analysis ^a
1. Antimony and its compounds	Any source	10 as Sb	AAS ^b
2. Arsenic and its compounds	Any source	10 as As	AAS ^b
3. Cadmium and its compound	Any source	10 as Cd	AAS ^b
4. Carbon Monoxide	Any industrial source	500 as CO	Orsat Analysis
5. Copper and its compounds	Any industrial source	100 as Cu	AAS ^b
6. Hydrofluoric Acid and Fluoride compounds	Any source other than the manufacture of Aluminum from Alumina	50 as HF	Titration with Ammonium Thiocyanate
7. Hydrogen Sulfide	i) Geothermal power plants ii) Geothermal exploration and well-testing iii) Any source other than (i) and (ii)	^{c, d} ^e 7 as H ₂ S	Cadmium Sulfide Method Cadmium Sulfide Method
8. Lead	Any trade, industry or process	10 as Pb	AAS ^b
9. Mercury	Any source	5 as elemental Hg	AAS ^b /Cold-Vapor Technique or Hg Analyzer
10. Nickel and its compounds, except Nickel	Any source	20 as Ni	AAS ^b

11. Carbonyl ^f			
12. NO _x	i) Manufacture of Nitric Acid	2,000 as acid and NO _x and calculated as NO ₂	Phenol-disulfonic acid Method
	ii) Fuel burning steam generators	1,500 as NO ₂	Phenol-disulfonic acid Method
	Existing Source New Source • Coal-fired • Oil-fired	1,000 as NO ₂ 500 as NO ₂	Phenol-disulfonic acid Method
iii) Any source other than (i) and (ii)	1,000 as NO ₂ 500 as NO ₂		
13. Phosphorus Pentoxide ^g	Any source	200 as P ₂ O ₅	Spectrophotometry
14. Zinc and its compounds	Any source	100 as Zn	AAS ^b

^a Other equivalent methods approved by the Department may be used.

^b Atomic Absorption Spectrophotometry

^c All new geothermal power plants starting construction by 01 January 1995 shall control H₂S emissions to not more than 150 g/GMW-Hr.

^d All existing geothermal power plants shall control H₂S emissions to not more than 200 g/GMW-Hr within 5 years from the date of effectivity of these revised regulations.

^e Best practicable control technology for air emissions and liquid discharges. Compliance with air and water quality standards is required.

^f Emission limit of Nickel Carbonyl shall not exceed 0.5 mg/NCM.

^g Provisional Guideline

Provided, That the maximum limits in mg/NCM particulates in said sources shall be:

1. **Fuel Burning Equipment**
 - a) Urban or Industrial Area 150 mg/NCM
 - b) Other Area 200 mg/NCM
2. **Cement Plants (Kilns, etc.)** 150 mg/NCM
3. **Smelting Furnaces** 150 mg/NCM
4. **Other Stationary Sources^a** 200 mg/NCM

^a Other Stationary Sources means a trade, process, industrial plant, or fuel burning equipment other than thermal power plants, industrial boilers, cement plants, incinerators and smelting furnaces

Provided, further, That the maximum limits for sulfur oxides in said sources shall be:

(1) Existing Sources

- | | |
|--|-------------------------------|
| (i) Manufacture of Sulfuric Acid and Sulf(on)ation Process | 2.0 gm/NCM as SO ₃ |
| (ii) Fuel Burning Equipment | 1.5 gm/NCM as SO ₂ |
| (iii) Other Stationary Sources ^a | 1.0 gm/NCM as SO ₃ |

(2) New Sources

- | | |
|--|-------------------------------|
| (i) Manufacture of Sulfuric Acid and Sulf(on)ation Process | 1.5 gm/NCM as SO ₃ |
| (ii) Fuel Burning Equipment | 0.7 gm/NCM as SO ₂ |
| (iii) Other Stationary Sources ^a | 0.2 gm/NCM as SO ₃ |

^a Other Stationary Sources refer to existing and new stationary sources other than those caused by the manufacture of sulfuric acid and sulfonation process, fuel burning equipment and incineration.

For stationary sources of pollution not specifically included in the immediately preceding paragraph, the following emission standards shall not be exceeded in the exhaust gas:

I. Daily And Half Hourly Average Values

	Daily Average Values	Half Hourly Average Values
Total dust	10 mg/m ³	30 mg/m ³
Gaseous and vaporous organic substances, expressed as total organic carbon	10 mg/m ³	20 mg/m ³
Hydrogen chloride (HCl)	10 mg/m ³	60 mg/m ³
Hydrogen fluoride (HF)	1 mg/m ³	4 mg/m ³
Sulphur dioxide (SO ₂)	50 mg/m ³	200 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for incineration plants with a capacity exceeding 3 tonnes per hour	200 mg/m ³	400 mg/m ³
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for incineration plants with a capacity of 3 tonnes per hour or less	300 mg/m ³	
Ammonia	10 mg/m ³	20 mg/m ³

II. All Average Values over the Sample Period of a Minimum of 4 and Maximum of 8 Hours

Cadmium and its compounds, expressed as cadmium (Cd)	Total 0.05
Thallium and its compounds, expressed as thallium (Tl)	mg/m ³
Mercury and its compounds, expressed as mercury (Hg)	0.05 mg/m ³
Antimony and its compounds, expressed as antimony (Sb)	
Arsenic and its compounds, expressed as arsenic (As)	
Lead and its compounds, expressed as lead (Pb)	
Chromium and its compounds, expressed as chromium (Cr)	
Cobalt and its compounds, expressed as cobalt (Co)	Total 0.5
Copper and its compounds, expressed as copper (Cu)	mg/m ³
Manganese and its compounds, expressed as manganese (Mn)	
Nickel and its compounds, expressed as nickel (Ni)	
Vanadium and its compounds, expressed as vanadium (V)	
Tin and its compounds, expressed as tin (Sn)	

These average values cover also gaseous and the vapor forms of the relevant heavy metal emissions as well as their compounds: *Provided*, That the emission of dioxins and furans into the air shall be reduced by the most progressive techniques: *Provided, further*, That all average values of dioxin and furans measured over the sample period of a minimum of 6 hours and a maximum of 8 hours must not exceed the limit value of 0.1 nanogram/m³.

Pursuant to Section 8 of this Act, the Department shall prepare a detailed action plan setting the emission standards or standards of performance for any stationary source, the procedure for testing emissions for each type of pollutant, and the procedure for enforcement of said standards.

Existing industries, which are proven to exceed emission rates established by the Department, in consultation with stakeholders, after a thorough, credible and transparent measurement process shall be allowed a grace period of eighteen (18) months for the establishment of an environmental management system and the installation of an appropriate air pollution control device: *Provided*, That an extension of not more than twelve (12) months may be allowed by the Department on meritorious grounds.

Section 20. Ban on Incineration. - Incineration, hereby defined as the burning of municipal, bio-medical and hazardous wastes, which process emits poisonous and toxic fumes, is hereby prohibited: *Provided, however*, That the prohibition shall not apply to traditional small-scale method of community/neighborhood sanitation "siga", traditional, agricultural, cultural, health, and food preparation and crematoria: *Provided, further*, That

RULE XXIII SYSTEM OF INCENTIVES

Section 1. Tax Incentives

Industries, which shall install pollution control devices or retrofit their existing facilities with mechanisms that reduce pollution, shall be entitled to tax incentives such as but not limited to tax credits and/or accelerated depreciation deductions. The Department in coordination with the DTI, DOF, NEDA and other concerned agencies shall develop the guidelines on tax incentives.

RULE XXIV RECORD-KEEPING, INSPECTION, MONITORING AND ENTRY

Section 1. Required Relevant Reports and Records

The Bureau or its duly accredited entity shall, after proper consultation and notice, require any person who owns or operates any emissions source or who is subject to any requirement of this Act to: (a) establish and maintain relevant records; (b) make relevant reports; (c) install, use and maintain monitoring equipment or methods; (d) sample emission, in accordance with the methods, locations, intervals and manner prescribed by the Environmental Management Bureau; (e) keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical; and (f) provide such other information as the Environmental Management Bureau may reasonably require.

Section 2. Right of Entry, Inspection and Testing

Pursuant to the Act, the Bureau, through its authorized representatives, shall have the right of:

- (a) entry or access to any premises including documents and relevant materials as referred to in the herein preceding paragraph;
- (b) inspect any pollution or waste source, control device, monitoring equipment or method required; and
- (c) test any emission.

Section 3. Records Available to the Public

Any record, report or information obtained under this section shall be made available to the public, except upon a satisfactory showing to the Bureau by the entity concerned that the record, report or information, or parts thereof, if made public, would divulge secret methods or processes entitled to protection as intellectual property. Such record, report or information shall likewise be incorporated in the Bureau's industrial rating system.

PART VII POLLUTION FROM STATIONARY SOURCES

RULE XXV STATIONARY SOURCES - GENERAL

Section 1. National Emission Standards for Source Specific Air Pollutants

For any trade, industry, process, fuel-burning equipment or industrial plant emitting air pollutants, the concentration at the point of emission shall not exceed the limits set in Table 2.

Table 2
National Emission Standards for Source Specific Air Pollutants (NESSAP)

POLLUTANT	STANDARD APPLICABLE TO SOURCE	MAXIMUM PERMISSIBLE LIMITS (mg/NCM)	METHOD OF SAMPLING^a	METHOD OF ANALYSIS^a
Antimony and its Cmpds.	Any source	10 as Sb	USEPA Methods 1 through 5 or 29	AAS ^b or per sampling method
Arsenic and its Cmpds.	Any source	10 as As	USEPA Methods 1 through 5 or 29	AAS ^b or per sampling method
Cadmium and its Cmpds.	Any source	10 as Cd	USEPA Methods 1 through 5 or 29	AAS ^b or per sampling method
Carbon Monoxide	Any industrial source	500 as CO	USEPA Method 3 or 10	Orsat Analysis or NDIR
Copper and its Cmpds.	Any industrial source	100 as Cu	USEPA Methods 1 through 5 or 29	AAS ^b or per sampling method
Hydrofluoric Acid and Fluoride Compounds	Any source other than manufacture of Aluminum from Alumina	50 as HF	USEPA Method 13 or 14 as appropriate	As per sampling method
Hydrogen Sulfide	i) Geothermal power plants ii) Geothermal Exploration And Well Testing iii) Any source other than (i) and (ii)	^{c, d} ^e 7 as H ₂ S	USEPA Method 11, 15 or 16 as appropriate	Cadnium Sulfide Method or per sampling method
Lead	Any trade, industry or process	10 as Pb	USEPA Methods 1 through 5 or 12 or 29	AAS ^b or per sampling method
Mercury	Any source	5 as elemental Hg	USEPA Methods 1 through 5 or 29 or 101	AAS ^{b/} Cold-Vapor Technique or Hg Analyzer
Nickel and its Cmpds. Except Nickel Carbonyl ^f	Any source	20 as Ni	USEPA Methods 1 through 5 or 29	AAS ^b or per sampling method

POLLUTANT	STANDARD APPLICABLE TO SOURCE	MAXIMUM PERMISSIBLE LIMITS (mg/NCM)	METHOD OF SAMPLING ^a	METHOD OF ANALYSIS ^a
NO _x	1) Manufacture of Nitric Acid 2) Fuel burning steam generators a) Existing Source b) New Source i) Coal-fired ii) Oil-fired 3) Diesel-powered electricity generators 4) Any source other than (1), (2) and (3) a) Existing Source b) New Source	2,000 as acid & NO ₂ calculated as NO ₂ 1,500 as NO ₂ 1,000 as NO ₂ 500 as NO ₂ 2,000 as NO ₂ 1,000 as NO ₂ 500 as NO ₂	USEPA Methods 1 through 4 and Method 7	Phenol-disulfonic acid Method or per sampling method
Particulates	1) Fuel Burning Equipment a) Urban ^e and Industrial Area ^b b) Other Area ⁱ 2) Cement Plants (kilns, etc.) 3) Smelting Furnaces 4) Other Stationary Sources ^j	150 200 150 150 200	USEPA Methods 1 through 5	Gravimetric per sampling method
Phosphorus Pentoxide ^k	Any source	200 as P ₂ O ₅	USEPA Methods 1 through 5 or 29	Spectrophotometry or per sampling method
Sulfur Oxides	1) Existing Sources a) Manufacture of Sulfuric Acid and Sulf(on)ation Process b) Fuel Burning Equipment c) Other Stationary Sources ^l 2) New Sources a) Manufacture of Sulfuric Acid and Sulf(on)ation Process b) Fuel Burning Equipment c) Other Stationary Sources ^l	2,000 as SO ₃ 1,500 as SO ₂ 1,000 as SO ₃ 1,500 as SO ₃ 700 as SO ₂ 200 as SO ₃	USEPA Methods 1 through 4 and 6 or 8 as appropriate	As per sampling method
Zinc and its Compounds	Any source	100 as Zn	USEPA Methods 1 through 5 or 29	AAS ^b or per sampling method

^a Other equivalent methods approved by the Department may be used.

^b Atomic Absorption Spectrophotometry.

^c All new geothermal power plants starting construction by 01 January 1995 shall control H₂S emissions to not more than 150 g/GMW-Hr.

^d All existing geothermal power plants shall control H₂S emissions to not more than 200 g/GMW-Hr.

^e Best available control technology for air emissions and liquid discharges. Compliance with air and water quality standards is required.

^f Emission limit of Nickel Carbonyl shall not exceed 0.5 mg/NCM.

^g Urban Area means a poblacion or central district of cities or municipalities having at least 50,000 population, or twin political subdivisions with contiguous boundary which essentially form one community whose population is more than 50,000 inhabitants. Inside these centers or population are some scattered industrial establishments.

^b Industrial Area means a well-defined, exclusive land use area in various stages of development that are primarily established for industrial subdivisions, manufacturing and other industry mixes with provisions for common support infrastructures, facilities and services such as roads, water supply, power supply, communication systems, housing, storm drainage, sanitary sewerage systems, industrial wastewater treatment facilities, etc. These areas which are usually from 200 to 500 hectares in size are registered with the (Housing and Land Use Regulatory Board (HLURB)) or any other duly authorized government entities as industrial estates, parks or area. Export processing zones also fall under this category of land use.

ⁱ Other Areas means all areas other than an urban or industrial area.

^j Other Stationary Sources (particulates) means a trade, process, industrial plant, or fuel burning equipment other than thermal power plant, industrial boilers, cement plants, incinerators, smelting furnaces.

^k Provisional guideline.

^l Other Stationary Sources (sulfur oxides) refers to existing and new stationary sources other than those caused by the manufacture of sulfuric acid and sulfonation process, fuel burning equipment and incineration.

Section 2. Visible Emission Standards for Smoke and Opacity

Visible opacity standards for smoke are as follows:

- a) The opacity of light or dark smoke emitted from any emission point in all stationary sources shall be such that, when compared in the appropriate manner with the Ringelmann Chart method, or using USEPA Method 9 (40 CFR, Part 60, Appendix A), or an equivalent method approved by the Department through the Bureau, visible emissions shall not appear darker than shade 1 on the Ringelmann Chart, nor exceed 20% opacity using USEPA Method 9.
- b) Exceptions to the requirements stated herein may be allowed under the following circumstances: The opacity limit hereinbefore prescribed shall not apply to the emission of dark smoke for less than five (5) minutes in a period of one (1) hour provided that the total period of such emission shall not exceed an aggregate of fifteen (15) minutes in any twenty-four (24) hours; provided further, that at no time should the opacity be darker than shade 3 of the chart; and provided finally, that this provisions shall not apply to cases of dark emissions resulting from cold-start and up-set conditions. Measurements of opacity shall be made in the manner specified by the approved method employed for this purpose.

Section 3. Absence of Emission Standard for Other Air Pollutants

- (a) Where no emission or ambient standard is prescribed hereof for a specific air pollutant that is potentially harmful to public health and/or public welfare, the owner or operator of an industrial plant or stationary source shall conduct its operation or process by the best practicable means as may be necessary to prevent or minimize air pollution through the employment of cleaner production technology and sound environmental management practices.
- (b) The absence of the ambient air or emission standard for a specific air pollutant shall not preclude the Department through the Bureau to take appropriate action to control such pollutants to assure the health, welfare and comfort of the general population.

Section 4. Sampling Methods

Sampling for compliance purposes shall be conducted using the methods prescribed above or other equivalent method as approved by the Department through the Bureau. Sampling shall be

Such information may also include data relating to the cost of installation and operation, energy requirement, emissions reduction benefits, and environmental impact or the emission control technology.

Section 2. Air Quality Control Techniques Database

The Bureau may establish an Air Quality Control Techniques Database.

RULE XXVIII NON-BURN TECHNOLOGIES

Section 1. Incineration Prohibited

Pursuant to Section 20 of the Act, incineration, hereby defined as the burning of municipal, bio-medical and hazardous wastes, which process emits toxic and poisonous fumes is prohibited.

Section 2. Non-Burn Technologies

With due concern on the effects of climate change, the Bureau shall promote the use of state-of-the-art, environmentally-sound and safe thermal and non-burn technologies for the handling, treatment, thermal destruction, utilization, and disposal of sorted, un-recycled, un-composted, biomedical and hazardous wastes.

Non-burn technologies are technologies used for the destruction, decomposition or conversion of wastes other than through the use of combustion and which comply with at least one of the following conditions:

- a) The environment within the destruction chamber is free of Oxygen; or
- b) Fire is not used within the destruction chamber; or
- c) The source of heat is not fire; or
- d) A heat-conducting material or medium, whether of a solid, liquid, gaseous, sol or gel form, is used to destroy the waste.

Non-burn technologies may be used provided that the following conditions are strictly complied with:

- (a) Applicable emission standards are not exceeded;
- (b) Installation and approved use of CEMS measuring PM, NO₂, CO, Chlorine and temperature;
- (c) Compliance with all other relevant requirements of these Implementing Rules and Regulations. In cases where the requirements of this Rule are more restrictive than those of the other requirements of the Implementing Rules and Regulations, the more restrictive requirements shall apply.

Section 3. Emission Standards for Treatment Facilities Using Non-Burn Technologies

Emissions from treatment facilities using non burn technologies shall be deemed toxic and poisonous when they result from the processing of chlorinated compounds, or when they exceed the following emission standards set forth in Tables 4 and 5.

Table 4
Daily and Half Hourly Average Limits –Treatment Facilities Using Non-burn Technologies

Item	Daily Average Values	Half Hourly Average Values
Particulates (total dust)	10 mg/NCM	30 mg/NCM
Gaseous and vaporous organic substances, expressed as total organic carbon	10 mg/NCM	20 mg/NCM
Hydrogen chloride (HCl)	10 mg/NCM	60 mg/NCM
Hydrogen fluoride (HF)	1 mg/NCM	4 mg/NCM
Sulfur dioxide (SO ₂)	50 mg/NCM	200 mg/NCM
Nitrogen monoxide (NO) and Nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for incineration plants with a capacity exceeding 3 tonnes per hour	200 mg/NCM	400 mg/NCM
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for incineration plants with a capacity of 3 tonnes per hour or less	300 mg/NCM	--
Ammonia	10 mg/NCM	20 mg/NCM

Table 5
Limits for Metals, Dioxins and Furans - Treatment Facilities Using Non-burn Technologies

Item	Average Values ^a
Cadmium and its compounds, expressed as cadmium (Cd)	total 0.05mg/NCM
Thallium and its compounds, expressed as thallium (Tl)	
Mercury and its Compounds, expressed as mercury (Hg)	0.05 mg/NCM
Antimony and its compounds, expressed as antimony (Sb)	total 0.5 mg/NCM
Arsenic and its compounds, expressed as arsenic (As)	
Lead and its compounds, expressed as lead (Pb)	
Chromium and its compounds, expressed as chromium (Cr)	
Cobalt and its compounds, expressed as cobalt (Co)	
Copper and its compounds, expressed as copper (Cu)	
Manganese and its compounds, expressed as manganese (Mn)	
Nickel and its compounds, expressed as nickel (Ni)	
Vanadium and its compounds, expressed as vanadium (V)	
Tin and its compounds, expressed as tin (Sn)	
Dioxins and Furans	0.1 nanogram/NCM

^a These average values cover gaseous and the vapor forms of the relevant heavy metal emission as well as their compounds. Provided, that the emission of dioxins and furans into the air shall be reduced by the most progressive techniques. The average values shall be measured over a sample period of a minimum of four (4) hours and a maximum of eight (8) hours, except that all averages of dioxins and furans shall be measured over a sample period of a minimum of six (6) hours and maximum of eight (8) hours.

Section 4. Non-applicability of the Prohibition

RULE X NEW/MODIFIED SOURCES IN ATTAINMENT AREAS

Section 1. Standards

New or modified sources must comply with National Emission Standards for Source Specific Air Pollution and Ambient Air Quality Standards pertaining to the source.

Section 2. Best Available Control Technology

Sources subject to this Rule shall, in addition to meeting the requirements of Section 1 of this Rule, install and operate Best Available Control Technology for each regulated pollutant with the potential to be emitted in quantities equal to or greater than 100 tons per year. Selection of the appropriate control technology will be made in consultation and with the approval of the Bureau but in no case shall it result in non-compliance with requirements of Section 1. Installation of the control equipment will be at the time of source construction or modification.

Section 3. Increment Consumption

No new source may be constructed or existing source modified if emissions from the proposed source or modification will, based on computer dispersion modeling, result in;

Exceedance of the National Ambient Air Quality Guideline Values; or
An increase in existing ambient air levels above the levels shown below

PM-10, annual arithmetic mean	17 micrograms per cubic meter
PM-10, 24-hr maximum	30 micrograms per cubic meter
Sulfur Dioxide, annual arithmetic mean	20 micrograms per cubic meter
Sulfur Dioxide, 24-hr maximum	91 micrograms per cubic meter
Nitrogen Dioxide, annual arithmetic mean	25 micrograms per cubic meter

In the case of multiple point sources at a single facility, the net emissions from all affected sources shall be included in a single increment analysis.

Section 4. Emission Averaging and Emission Trading

Sources subject to provision of this Rule shall not be eligible for emission averaging however they may generate emission credits for purposes of an acceptable emission trading program.

Section 5. Continuous Emission Monitoring

New and modified sources shall install and operate, according to manufacturer specifications, continuous emission monitoring systems (CEMS) for each applicable pollutant listed in Section 4, Rule IX that the source has the POTENTIAL to emit in quantities equal to or greater than 100 tons per year. TSP and PM-10 fractions are not differentiated for purposes of this section; therefore, applicability will be determined by the total particulate matter expected to be emitted for new sources, or as collected by 40 CFR Part 60, Appendix A, Method 5 for modified sources. CEMS shall be applied as follows:

All sources subject to this section: Sources shall install and operate a CEMS for carbon dioxide and oxygen that meets criteria provided in USEPA 40 CFR Part 60 Appendix B, Performance Specification 3. Additionally, each source shall, as appropriate meet the following requirements;

Pollutants	Concentration ^a		Averaging Time (min)	Method of Analysis/Measurement ^c
	µg/NCM	Ppm		
Asbestos	2 x 10 ⁶ Particulates/NC M (over 5 micrometer in size)	--	30	Light Microscopy
Sulfuric Acid	0.3 mg/NCM	--	30	Titration
Nitric Acid	0.4 mg/NCM	--	30	Titration

^a Ninety-eight percentile (98%) values of 30-min. sampling measured at 25°C and one atmosphere pressure.

^b Atomic Absorption Spectrophotometry.

^c Other equivalent methods approved by the Department through the Bureau may be used.

Section 2. Review of Ambient Air Quality Standards

The Bureau shall provide industries, non-government organizations (NGOs) and other stakeholders the opportunity to participate in the formulation and revision of standards, determination of the technical feasibility of the revised standards, setting the schedule of implementation of the revised standards, and other related concerns. The Bureau shall, on an annual basis, in coordination with other concerned agencies, review the list of Hazardous Air Pollutants and the National Ambient Air Quality Standards for Source Specific Air Pollutants under Section 12 of the Act and recommend to the Secretary of the Department the revision thereof when necessary to protect public health and safety, and general welfare.

Section 3. Publication of Revised Standards

Upon approval by the Secretary of the Department, the revised Ambient Air Quality Standards shall be published in a newspaper of general circulation and may be posted on a public internet website.

RULE XXVII AIR QUALITY CONTROL TECHNIQUES

Section 1. Air Quality Control Techniques

Simultaneous with the issuance of the Ambient Air Quality Guideline Values, the Bureau, through the National Research and Development Program contained in the Act, and upon consultation with the appropriate advisory committees, government agencies and LGUs, shall issue, and from time to time, revise information on air pollution control techniques. Such information shall include:

- (a) Best available technology and alternative methods of prevention, management and control of air pollution;
- (b) Best available technology economically achievable which refers to the technological basis/standards for emission limits applicable to existing, direct industrial emitters of non-conventional and toxic pollutants; and
- (c) Alternative fuels, processes and operating methods which will result in the elimination or significant reduction of emissions.

Such information may also include data relating to the cost of installation and operation, energy requirement, emissions reduction benefits, and environmental impact of the emission control technology.

Section 2. Air Quality Control Techniques Database

The Bureau may establish an Air Quality Control Techniques Database.

RULE XXVIII NON-BURN TECHNOLOGIES

Section 1. Incineration Prohibited

Pursuant to Section 20 of the Act, incineration, hereby defined as the burning of municipal, bio-medical and hazardous wastes, which process emits toxic and poisonous fumes is prohibited.

Section 2. Non-Burn Technologies

With due concern on the effects of climate change, the Bureau shall promote the use of state-of-the-art, environmentally-sound and safe thermal and non-burn technologies for the handling, treatment, thermal destruction, utilization, and disposal of sorted, un-recycled, un-composted, biomedical and hazardous wastes.

Non-burn technologies are technologies used for the destruction, decomposition or conversion of wastes other than through the use of combustion and which comply with at least one of the following conditions:

- a) The environment within the destruction chamber is free of Oxygen; or
- b) Fire is not used within the destruction chamber; or
- c) The source of heat is not fire; or
- d) A heat-conducting material or medium, whether of a solid, liquid, gaseous, sol or gel form, is used to destroy the waste.

Non-burn technologies may be used provided that the following conditions are strictly complied with:

- (a) Applicable emission standards are not exceeded;
- (b) Installation and approved use of CEMS measuring PM, NO₂, CO, Chlorine and temperature;
- (c) Compliance with all other relevant requirements of these Implementing Rules and Regulations. In cases where the requirements of this Rule are more restrictive than those of the other requirements of the Implementing Rules and Regulations, the more restrictive requirements shall apply.

Section 3. Emission Standards for Treatment Facilities Using Non-Burn Technologies

Emissions from treatment facilities using non burn technologies shall be deemed toxic and poisonous when they result from the processing of chlorinated compounds, or when they exceed the following emission standards set forth in Tables 4 and 5.