

ILLINOIS POLLUTION CONTROL BOARD  
January 22, 1987

IN THE MATTER OF: )  
 )  
PROPOSED AMENDMENTS TO PART 211, ) R86-34  
DEFINITIONS APPLICABLE TO )  
NEW MUNICIPAL INCINERATORS )

PROPOSED RULE. FIRST NOTICE.

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter comes before the Board upon the mandate of Section 9.4(d) of the Illinois Environmental Protection Act ("Act") and an attendant regulatory proposal filed by the Illinois Environmental Protection Agency ("Agency") on August 7, 1986. Merit hearings on the Agency's proposal were held in Springfield on December 8, 1986, and in Chicago on December 15, 1986.

BACKGROUND

Section 9.4 of the Act (Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4) was added by P.A. 84-957 and became effective July 1, 1986. It consists of seven subsections, 9.4(a) through (g).

In subsection 9.4(a) the General Assembly finds that (1) air pollution from municipal waste incineration may constitute a threat to public health, welfare and the environment, and that (2) proper design, operation and maintenance of combustion and flue-gas control systems can substantially reduce the emissions of acid gases, metallic compounds and organic materials from municipal waste incineration.

Subsection 9.4(b) identifies that "the purpose of this Section is to insure that emissions from new municipal waste incineration facilities which burn a total of 25 tons or more of municipal waste per day are adequately controlled". Subsection 9.4(b) further specifies that such new municipal waste incineration facilities shall be subject to emissions limits and operating standards based on the application of Best Available Control Technology ("BACT"), as determined by the Agency, for four categories of pollutants:

1. particulate matter, sulfur dioxide and nitrogen oxides;
2. acid gases;
3. heavy metals; and
4. organic materials.

Subsections 9.4(e) and 9.4(f) define BACT, municipal waste incineration and new municipal waste incineration for purposes of Section 9.4. Subsection 9.4(g) specifically excludes industrial incineration facilities that burn waste generated at the same site from the provisions of Section 9.4.

Subsection 9.4(d) specifies the roles of the Board and the Department of Energy and Natural Resources ("Department") in implementing Section 9.4. In its entirety, 9.4(d) specifies that:

- d. Within one year after the effective date of this amendatory Act of 1985, the Board shall adopt regulations pursuant to Title 7 of this Act, which define the terms in items (2), (3) and (4) of subsection (b) of this Section, which are to be used by the Agency in making its determination pursuant to this Section. The provisions of Section 27b of this Act shall not apply to this rulemaking.

Such regulations shall be written so that the categories of pollutants include, but need not be limited to, the following specific pollutants:

1. hydrogen chloride in the definition of acid gases;
2. arsenic, cadmium, mercury, chromium, nickel and lead in the definition of heavy metals; and
3. polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans and polynuclear aromatic hydrocarbons in the definition of organic materials.

The role of the Board is thereby identified at the minimum as the promulgation of definitions for the terms "acid gases", "heavy metals", and "organic materials", as these terms are to apply to the provisions of Section 9.4. Moreover, such definitions are to include as a minimum the chemical constituents specified by 9.4(d) within each of the three categories.

The Board notes that the fourth category of pollutants to which the emission limits and operating standards are to be applied according to 9.4(b), i.e., particulate matter, sulfur dioxide and nitrogen oxides, are excluded from this mandate to promulgate definitions. The term "particulate matter" is already defined within 35 Ill. Adm. Code 211 and this definition is apparently intended to apply to the provisions of Section 9.4. Sulfur dioxide and nitrogen oxides are specific chemical species with conventionally accepted definitions.

9.4(d) also specifies that the provisions of Section 27(b) of the Act shall not apply to this rulemaking. Section 27(b) directs the Board to conduct hearings on the economic impact of proposed regulations, and to receive comments from the public regarding economic impact studies as prepared by the Department. The Board interprets the nonapplicability of 27(b) in the instant matter to mean that the normal process of economic impact study preparation and review are mandated to be inapplicable. The Department by letter dated January 6, 1987, has concurred in this evaluation. Accordingly, no economic analysis has been or will be undertaken by the Department.

#### PROPOSED DEFINITIONS

The Agency proposes the definition of the three terms in question as follows:

Acid Gases: for the purposes of Ill. Rev. Stat. 1985, ch. 111 1/2, par. 1009.4, "acid gases" shall be defined as hydrogen chloride, hydrogen fluoride and hydrogen bromide, which exist as gases, liquid mist, or any combination thereof.

Heavy Metals: for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4, "heavy metals" shall be defined as compounds of arsenic, cadmium, mercury, chromium, nickel and lead.

Organic Materials: for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4, any chemical compound of carbon including diluents and thinners which are liquids at standard conditions and which are used as solvers, viscosity reducers or cleaning agents, and polychlorinated<sup>1</sup> dibenzo-p-dioxins, polychlorinated dibenzofurans and polynuclear aromatic hydrocarbons shall be considered to be organic materials. Methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbonic acid, metallic carbide, metallic carbonates and ammonium carbonate shall not be considered to be organic materials for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4.

For the definition of acid gases, the Agency proposes that the two compounds hydrogen fluoride (HF) and hydrogen bromide (HBr) be added to the legislatively mandated hydrogen chloride (HCl). The rationale for inclusion of HF and HBr is that these

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<sup>1</sup> The term "polychlorinated", as presented at this point in the definition, was inadvertently excluded from the text of the original Agency proposal. It was added at hearing (R. at 26).

compounds are likely to be produced by municipal waste incineration and both are environmentally harmful. Fluorine and bromine, like their chemical relative chlorine, are constituents of commonly incinerated materials, including papers, plastics, insulations and pesticides (Ex. 5; Ex. 12, Tables 1 and 2). Moreover, in the same manner that many chlorine compounds produce HCl upon combustion, many fluorine and bromine compounds produce HF and HBr (R. at 8).

The Agency further proposes that the definition of acid gases include both gaseous and liquid mist forms for the purposes of 9.4. The Agency's rationale is that:

It is expected that at the high temperatures of the incinerator, any moisture present will be in the vapor state. However, there may be subsequent cooling of the exit gases from the incinerator which would cause moisture to condense. In addition, the sampling train contains condensers that will cause the moisture to condense. Since the acid gases [are] very soluble in water, any liquid water present would result in an acid mist. To correctly determine the acid gas emissions, it is necessary to consider not only the gases themselves but also any liquid mist that has been formed from these gases. R. at 9.

In its proposed definition for heavy metals the Agency includes only those metals specifically mandated for inclusion by the General Assembly. In the Agency's judgement there are no other heavy metals typically found in municipal wastes which need to be addressed for the purposes of BACT determinations (Agency Proposal, p. 3). Moreover, the Agency believes that specification of the six mandated metals would be sufficient to allow control not only of the six mandated metals, but of other metals as well. The rationale is that any additional metals of possible environmental concern are unlikely to occur in municipal waste other than in combination with the six, and that the systems necessary to control the six would also effectively control these additional metals (R. at 27-29).

The proposed definition of organic materials combines the existing definition of organic materials as presently found at 35 Ill. Adm. Code 211.122 with the three compounds required for inclusion by 9.4(d). Adoption of this recommendation would thereby produce two definitions of organic materials within Section 211.122, one definition of general applicability and one definition specific to the new municipal incinerator provisions of Section 9.4.

#### DISCUSSION

Application of BACT to new municipal incinerators lacks most of the decision elements normally encountered in rulemaking matters before the Board, in that all of the major elements have

been prescribed by the General Assembly in Section 9.4. Thereby, many of the tests the Board is mandated to apply in rulemakings are not present in the instant matter. In fact, the only issue before the Board is that of the rationale for the discretionary additions proposed by the Agency to the three definitions mandated by the General Assembly. To the extent that such tests might be applicable, the Board does determine that the Agency's proposed definitions do not raise major issues related to either technical feasibility or economic reasonableness.

The Board also determines that the Agency's proposed definitions are consistent with Section 9.4 of the Act. For these reasons the Board today proposes for first notice publication the definitions as proposed by the Agency, with nonsubstantive modifications as described below.

The modifications consist of alterations to the form of the definitions for acid gases and heavy metals to conform them more closely to the existing definitions of Part 211, and specification within the definition of heavy metals of the "elemental, ionic, or combined" forms of the metals. The latter alteration is believed to allow the Agency a broader latitude in testing for the existence of the metals than would be the case if only the "compounds" of the metals were specified.

For the purposes of First Notice, the Board proposes unaltered the Agency's recommendation of including only the six mandated metals within the definition of heavy metals. However, the Board does note that there are other heavy metals which are known or suspected to produce adverse health effects and which are known to be subject to emission release upon combustion. These include antimony, beryllium, copper, manganese, molybdenum, selenium, tin, vanadium, and zinc (see Ex. 8). The Board would welcome comment during the First Notice period on the possible inclusion of these, or other metals, within the proposed heavy metals definition.

ORDER

The Board hereby proposes the following amendments for first notice publication. The Clerk shall cause publication of these proposed amendments in the Illinois Register:

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE B: AIR POLLUTION

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS  
FOR STATIONARY SOURCES

PART 211  
DEFINITIONS AND GENERAL PROVISIONS

SUBPART 3: DEFINITIONS

Section 211.122 Definitions

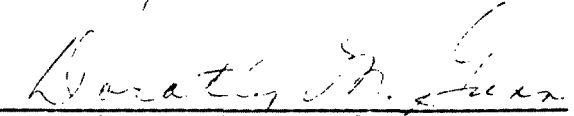
"Acid Gases": for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4, hydrogen chloride, hydrogen fluoride and hydrogen bromide, which exist as gases, liquid mist, or any combination thereof.

"Heavy Metals": for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4, elemental, ionic, or combined forms of arsenic, cadmium, mercury, chromium, nickel and lead.

"Organic Materials": for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4, any chemical compound of carbon including diluents and thinners which are liquids at standard conditions and which are used as solvers, viscosity reducers or cleaning agents, and polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans and polynuclear aromatic hydrocarbons shall be considered to be organic materials. Methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbonic acid, metallic carbide, metallic carbonates and ammonium carbonate shall not be considered to be organic materials for the purposes of Ill. Rev. Stat. 1935, ch. 111 1/2, par. 1009.4.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 22nd day of January, 1937, by a vote of 6-0.

  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board