ILLINOIS POLLUTION CONTROL BOARD
June 20, 1986

IN THE MATTER OF:	)	
	)	
PARTICULATE EMISSION STANDARDS FOR CONTINUOUS AUTOMATIC STOKING PATHOLOGICAL WASTE INCINERATORS	)	R84-42

PROPOSED RULE FIRST NOTICE

OPINION AND ORDER OF THE BOARD (by B. Forcade):

This matter comes before the Board on a November 1, 1984, regulatory proposal by Basic Environmental Engineering Inc. ("Basic"). Basic proposes a new state-wide general regulation that would establish particulate emissions standards for continuous automatic stoking pathological waste incinerators ("Basic incinerator"). Hearings were held on April 24, 1985, in Chicago and on June 3, 1985, in Springfield. On October 8, 1985, the Department of Energy and Natural Resources ("DENR") filed a letter of negative declaration of economic impact, obviating the need for a formal economic impact study. The Economic and Technical Advisory Committee of the DENR concurred with this action on October 17, 1985.

The proposed regulatory language has been amended several times during the course of this proceeding. The most current version is found in the Illinois Environmental Protection Agency ("Agency") December 11, 1985, final comments (P.C. No. 5). Basic concurs with the language changes advocated by the Agency (P.C. No. 6).

Basic is the inventor and manufacturer of a new application of continuous automatic stoking to animal (non-human) pathological waste incineration. Although the proposal is for a state-wide rule, the only known facility that would be affected by the new rule is the City of Chicago animal incinerator at Goose Island (4/24/85, R. 19,44). The City of Chicago operates a Basic incinerator along with two other batch type incinerators. The incinerators at Goose Island destroy dead animals from city streets, animal pounds and animal hospitals (4/24/85, R. 21-24). The proposed rule would allow animal pathological incinerators using automatic stokers to apply a different basis for determining the emission limit than Section 212.181. The existing concentration based regulation requires that new incinerators cannot emit more than 0.1 grains of particulate matter per dry standard cubic foot (gr/dscf), when corrected to 12% CO_2. It is this correction to 12% CO_2 that the petitioner feels is unjust for pathological incinerators employing automatic

stoking. The proposed rule establishes a different method of calculating particulate emission and a corresponding emission limitation that would apply only to continuous automatic stoking pathological incinerators.

The genesis of the proposed rule is the current operating permit condition imposed on the Basic incinerator at Goose Island that requires the addition of charcoal to the animal charge in order to ensure compliance with Section 212.181. The Agency imposed this operating condition after two compliance stack tests were conducted at the Goose Island incinerator. During the first stack test, the incinerator was operated with a charge comprised solely of animal carcasses. Under these conditions, the test results, when corrected to 12% CO_2, exceeded the existing emission limit. Believing the exceedence to be caused by low CO_2 emissions, a second stack test was performed where charcoal was added to the animal charge. The purpose of adding charcoal was to increase the CO_2 content of the flue gas and thereby reduce the correction to 12% CO_2. Under these conditions, the incinerator passed the stack test and an operating permit was issued by the Agency. The permit stipulates that charcoal always be added to the animal charge (4/24/85, R. 60). The proposed rule, which would allow a mass emissions (pounds of emissions/pounds of charge) method of calculating compliance rather than the existing concentration based method (grains/dscf, when corrected to 12% CO_2) would obviate the need to add charcoal.

Basic presented testimony regarding the undesirability of adding charcoal to the animal charge: 1) the Basic system is designed to utilize natural gas jets to insure complete combustion of the high water content animal waste. Charcoal is expensive in terms of material and labor and is redundant to natural gas; 2) the addition of charcoal, which is done by hand, increases worker exposure to the infectious pathological waste. The intended method of operation, without charcoal, minimizes the amount of human handling of the waste; 3) it is difficult to estimate and arrange the amount of charcoal needed as the animal charge is inherently variable; 4) charcoal occasionally insulates the charge and prevents complete "burn-out," necessitating workers entering the incinerator and breaking up chunks of raw animal waste. Natural gas jets, which directly impinge on the waste, provide more complete destruction of the animal waste and ensures sterile rather than putrescible ash (4/24/85, R. 24-28, 57-61). Basic also pointed out that the addition of charcoal logically increases the total amount of material being burned and thereby increases the total amount of particulate emissions when compared to animal charge alone (6/3/85, R. 33).

Basic asserts that the current concentration based standard and method of calculating emissions places the Basic type incinerator at a disadvantage when compared with batch type

incinerators. This is due to the existing rules' requirement of correction to 12% CO_2. The existing rule is expressed in terms of the concentration of particulate emissions in the stack gas. CO_2 is a product of combustion that can be measured. Correcting the particulate emission calculation to 12% CO_2 provides a reference point to determine whether any dilution of the emissions is occurring. Dilution occurs when excess air, not necessary for combustion, is inadvertently or intentionally admitted into the incinerator. Such dilution affects the concentration of particulate emissions in the stack gas. Consequently, the current rule establishes a grain concentration with a corresponding standard correction factor of 12% CO_2.

Basic asserts that during a compliance stack test, batch type incinerators are more able to advantageously "cluster" CO_2 emissions than the Basic incinerator which emits CO_2 in a more continuous manner. Continuously stoked incinerators cannot minimize the carbon dioxide correction factors by performing the test over the period of time with highest CO_2 emissions like a batch type incinerator can. This can result in misrepresenting the actual emissions from batch type incinerators and, consequently, unfairly creating a bias against a Basic type incinerator in a stack test.

In place of the concentration based emission limit, the petitioner proposes a mass loading emission rate, i.e., 0.1 pounds of particulate per 100 pounds of charge (0.1 lb/100 lb charge). While it is the stated desire of the petitioner that the new emission limit be exactly as stringent as the existing emission limit, it is the demonstration of this equivalency that becomes the central issue in this proceeding. As this proposal is state-wide in its application, issues relating to the demonstration of attainment of the National Ambient Air Quality Standard (NAAQS) for total suspended particulates (TSP) arise. There are still areas in Illinois for which the state cannot demonstrate attainment with the NAAQS. The Basic incinerator at Goose Island is located in a primary non-attainment areas for TSP (6/3/85, R. 59, 4/24/85, R. 80). Such attainment was to have been demonstrated by the end of 1982. Illinois presently has an extension. Any amendment to existing regulations that would allow an increase of emissions of particulate matter may not be approvable by the U.S. Environmental Protection Agency as part of the State Implementation Plan (SIP) and may also make it more difficult to demonstrate that the NAAQS can be attained.

The record in this matter developed through a pattern of testimony, response and modification, with the Agency, petitioner and Board interacting at hearing and through written comments. It is necessary to review the evidence presented in some detail as the central issue in the proceeding is technical in nature.

The first several exhibits (Exhibits 1 and 2) described the actual design of the Basic incinerator located at the Goose Island facility. Detail was given to the difference between this design and a design which would typify the existing batch type incinerators with stationary fixed hearths that are currently being used about the state. One difference between the two types of incinerators is the nature of the feed operation. Batch systems are operated by placing the charge, which in this case is animal carcasses, onto the hearth and incinerating for a fixed period of time. At the conclusion of this period, a second charge is pushed onto the hearth and any remains from the first charge are pushed out onto a grate where the ash can fall out and be removed. By comparison, the Basic design incorporates automatic stoking which is a continuous feed operation. This method of stoking, together with some of the other design features result in a more continuous or uniform progression of the charge through the incinerator. While it is the intent of present incinerator regulations that the testing procedures for demonstration of compliance be unbiased so that the same performance standards are met regardless of the type of incinerator, this difference in the feed operation may influence the results of emission tests.

To explain this effect, it must be understood that the combustion rate, or manner in which the charge is burned, is not constant. For the purposes here, this implies that during the first period, that is the period immediately following placement of the carcass on the hearth, very little CO_2 is being released. Most of the heat supplied is being used to reduce the high moisture content of the animal. Once sufficient evaporation has taken place, the heat is used to ignite the combustible animal tissue. This period of rapid combustion can be noted by an increase in the amount of CO_2 released. A final period may be considered in which the combustion rate tapers off as the amount of material left for combustion becomes limited. It should be noted that any sample of the CO_2 concentration obtained at the discharge stack and taken over a finite time period will reflect the mode of combustion that was occurring in the incinerator at that time. It is the contention of the petitioner that during stack tests for compliance, operators of batch type incinerators typically begin their stack test so that the period of the test coincides with the period of highest CO_2 release from the charge. The petitioners then argue that this inherent "edge" cannot be capitalized on by an automatic stoking incinerator. The reason being that automatic stokers, as opposed to batch systems, are continuously fed and that all modes of combustion are running simultaneously and therefore one would expect to see less time variability in the CO_2 concentration at the discharge stack.

This contention is stated in testimony given by Merle Jackson at the first hearing and is supported in Exhibits 4, 5 and 7. Exhibit 4 is a stack test report dated January 4, 1984, in which the Goose Island automatic stoking incinerator was tested for purposes of permit requisition. The results of the individual stack tests show that the average amount of charge was 1,820 lbs; the average CO_2 content in the stack (after subtraction of the CO_2 in the auxiliary fuel) was 1.3%; the average concentration at 12% CO_2 was 0.464 gr/dscf and the emission rate was 1.466 lb/hr. The uncorrected concentration in the stack gas was 0.012 gr/dscf. Since the measured CO_2 content was between 1.0% and 1.5%, the 12% CO_2 concentration correction factor was between 8 and 12, and the averaged concentration corrected to 12% CO_2 was 0.464 gr/dscf, well above the limit of 0.1 gr/dscf.

A second stack test of the incinerator was conducted for purposes of demonstrating compliance with the existing regulation on April 12, 1984. The major difference in the operation of the incinerator during the latter test, as compared to the January 4 test, was the addition of charcoal to the charge. Approximately 40 lbs. of charcoal were added to each load of animal carcass entering the incinerator. The addition of charcoal produced CO_2 levels in the range of 5.0% to 6.0% and, therefore, 12% CO_2 concentration corrections of 2.0 to 2.4. These test results then yielded an averaged emission rate of 1.517 lb/hr and a concentration corrected to 12% CO_2 of 0.097 gr/dscf when the charging rate was 1,851 lb/hr. Comparing these two incinerator performance tests on a mass loading basis, the first test resulted in an emission rate of 0.0809 lbs of particulate per 100 lbs of charge and the second test resulted in a value of 0.0828 lbs of particulate per 100 lbs of charge. These values are nearly equivalent, although the actual emissions were slightly greater when charcoal was mixed with the charge. Since the concentration was below the existing emission limit, a permit was issued to the facility. However, an operating condition was placed on the permit requiring charcoal to be burned with the animal carcasses.

Via a series of testimony presented by John Basic, president of Basic Engineering; Merle Jackson, environmental consultant to Basic Engineering; and Robert Cyboran, project manager for the City of Chicago Goose Island facility; evidence was presented to support the petitioner's objection to adding charcoal to the charge. The major points were: 1) that better sterility of the ash could be achieved with natural gas burning as opposed to charcoal; 2) burning with natural gas would be 50-60% less expensive than using charcoal; and 3) it is more difficult to assure complete destruction when the incinerator is operated with a charcoal charge. Also, 4) the method by which charcoal is manually added to the charge by workers creates an additional opportunity for exposure to disease producing bacteria and is therefore an unnecessary health risk.

The Agency did not present any evidence supporting the advantage of using charcoal in the charge other than to note than comparable incineration would be achieved with a greater percentage of CO_2 in the stack gas.

The evidence presented in Exhibits 7 through 13 were concerned with the demonstration of equivalency between the proposed 0.1 lbs of particulate per 100 lbs of charge rule change and the existing regulation. While the question of equivalency may at first appear quite straightforward, there are several ways of approaching the problem where each, though correct, result in different values.

The argument taken by the Agency was that if one makes the comparison on a theoretical basis using stoichiometric combustion, the existing regulation is more stringent than the proposed regulation. Exhibit 9 and the written testimony of Berkley Moore demonstrate that if the chemical analysis for pathological waste as presented in AP-40 are used, the requested rule would constitute a relaxation of between 11.5% and 750.0% of the existing regulation. The reason for the wide range of values is that the calculated emissions, in terms of pounds of particulate per pound of charge, depend upon the water content in the charge. The water content is important since any variability in the chemical composition of the fuel results in a similar variability in the mass emission based regulation. Using the average water content of animal pathological waste as given in AP-40 results in a 77% relaxation of the standard. It should be noted that although the values cited in AP-40 are probably the best information available and that the manual is considered a standard reference for calculations of this nature, the numbers must be viewed in light of the fact that a very limited amount of information has been gathered on the chemical composition of animal pathological wastes.

The petitioner presented a more empirical comparison of the two regulations. The focus of this comparison was Exhibit 12 where the emissions from a number of pathological incinerators were plotted by both a concentration at 12% CO_2 basis and by a measured pound of emission per 100 pounds of charge basis. (Exhibit 8, which was submitted at the first hearing, contains most of the same data points as Exhibit 12 which was submitted at the second hearing. The major distinction between the two plots is that Exhibit 12 provides a reference for each test or data point.) The data selected, in general, support the contention that a regulation of 0.1 lb/100 lb charge would be equivalent. That is, one would expect to see an equal degree of control required by this regulation as would be expected under the existing regulation. Exhibit 12 includes the test results of the stack emission test as the Goose Island facility.

Exhibit 13 is an extension of Exhibit 12 where the measured concentration corrected to 12% CO_2 is converted to a theoretical mass emission rate using the average chemical composition of pathological waste as given in AP-40. The theoretical line then represents the stoichiometric equivalence between the two regulations and is in agreement with the Agency's calculations. The petitioner goes on to argue that the data presented in Exhibit 13 does not support the theoretical equivalence but rather that a "line of sight" drawn through the measured data points suggests a slope of about 1/2 the theoretical value. The petitioner believes that the reason for this discrepancy is, again, that the CO_2 measurements obtained during stack tests on batch incinerators reflect values which are greater than the true averaged amount of CO_2 emitted during the complete burning cycle.

To emphasize this point, Exhibit 7 was entered. Exhibit 7 is a summary of CO_2 measurements taken during independent stack tests on batch type incinerators. These data indicate that when a carbon balance is performed, that is when the quantity of CO_2 actually measured is divided by the amount of CO_2 in the stack gas from stoicheometric combustion, the resulting carbon balances are typically greater than 200%. Since a value of 100% would be expected, the petitioner suggests that batch incinerators are capable of producing CO_2 values that are artificially high and which help meet compliance by reducing the 12% CO_2 correction.

Via the written testimony of Dr. John Reed, the Agency refuted some of the arguments and conclusions presented by the petitioner. First, the Agency pointed out that only four of the incinerator stack test results reported by the petitioner in Exhibit 7 are considered acceptable by the Agency. The other tests are not considered representative of the performance of existing permitted incinerators in Illinois. Also, the Agency pointed out that the petitioner's explanation for large CO_2 concentration measurements in batch type incinerators and low CO_2 concentration measurements in automatic stoking incinerators is only one of several plausible explanations. They noted several other explanations for the observed phenomena. Certainly there is difficulty in drawing positive conclusions for the cause of differing CO_2 concentration levels in these incinerators based upon the amount of data presently available.

The detailed discussion of CO_2 levels is necessary because it becomes a key element in the technical position taken by the Agency and the petitioner. The petitioner argues that the inherent edge that batch type incinerators have been used to artificially increase the measured CO_2 content and achieve compliance should be recognized when determining equivalency with the proposed regulation. Alternatively, the Agency presents the position that a more straightforward theoretically based conversion will result in a more stringent limitation under the existing rule rather than the proposed 0.1 lb/100 lb charge limitation.

During the course of the April 24, 1985, hearing, the petitioner amended the proposal to include this sentence:

> "The particulate emissions produced when burning animal pathological waste using gaseous auxiliary fuel shall not exceed the pounds per hour emission rate equivalent to the concentration rate set forth in Section 212.181 (d) when applied to burning mixed charge animal pathological waste for demonstration of compliance." (Basic Amended Proposal).

This addition seemed to address some of the Agency's concerns regarding a potential loosening of existing particulate emission limitations. The question then arises as to how can the amended language be effectively implemented. To this end, the Agency presented testimony by James Cobb regarding how the proposed regulation would be implemented, if adopted by the Board. Two series of stack tests would be performed, and compared to demonstrate equivalency with Section 212.181. The purpose of comparing the test results is to show that actual emissions of particulate matter are less under the proposed regulation when only animal pathological waste is burned than emissions of particulate matter which are allowed under the existing regulation when burning a mixture of the same amount of animal pathological waste plus up to 25% of additional material with a higher carbon content.

The first series of tests would be performed with the mixed charge and must demonstrate that the incinerator can meet the existing particulate emission limitation of 0.1 gr/dscf. The results of this series of tests are converted to a particulate emissions limit expressed in lb/hr. The second series of tests would be performed using the same amount of animal pathological waste as during the first series of tests but without the addition of charcoal. The objective of this series of tests would be to demonstrate that operation under "normal" conditions would not produce particulate emissions greater than the proposed allowable limits of 0.1 lb/100 lb charge consisting only of animal pathological waste. If the results of this series of tests are less than the lb/hr allowable limit from the first series, then the emissions will not be greater than allowed under existing Section 212.181(d). Petitioner would be satisfied with this "two test" method of determining compliance (6/3/85, R. 107-109 , P.C. No. 6).

The remaining exhibits, Exhibits 14 and 15, demonstrate that the Goose Island facility is located in a primary non-attainment area.

The Agency, in its final comments, describes its position regarding the proposed rule change as being one of "caution" (P.C. No. 5). The Agency's primary concerns focuses on whether the proposed rule would be approvable by the USEPA as a SIP revision. The existing incinerator rule, Section 212.181, has been approved by USEPA . The proposed rule would apply statewide, in both attainment and non-attainment areas for TSP. Specifically, the only existing Basic type incinerator is located in a primary non-attainment area. The Agency has legitimate concerns in this regard because it is their duty under the Act to submit regulatory amendments to USEPA as SIP revisions.

Two tests will have to be passed by any regulation adopted by the Board for non-attainment areas. First, it will have to be shown that the regulation will not jeopardize any attainment demonstration approved by the USEPA as part of the SIP and second, it will have to be shown that the emissions allowed by the regulation constitute "reasonably available control technology" (RACT) (P.C. No. 5, pp. 7-10).

The Agency believes that there are several ways that USEPA could view the proposed rule for purposes of determining the air quality impacts in a non-attainment area in its review as a SIP amendment. Since, from a theoretical point of view, the regulation could allow an increase in emissions over current operation, the USEPA may disapprove the regulation because the state does not have an approved attainment demonstration for particulate matter in any non-attainment area for this pollutant. In the absence of such demonstration, USEPA cannot determine what, if any, impact the proposal will have on the state's ability to achieve the goals of the attainment demonstration. This rationale has been given for disapproval of variances from particulate standards in non-attainment areas (50 FR 26732).

However, the size of the one existing facility and the magnitude of the potential increase in emissions under the proposed regulation may affect the response. If the existing Basic incinerator were to operate at the maximum rate, that is, 24 hours per day, 365 days per year, then the total emissions under the proposed regulation would be 8.76 tons per year. When compared to the operation of a standard incinerator burning the same material under the existing regulation, at the theoretical rate of 0.056 lb/100 lb charge, the anticipated emissions would be 4.9 tons per year. The difference of 3.8 tons may be considered insignificant by USEPA. In its letter of June 21, 1985, to the DENR, John Basic used the figure of 2080 hours of operation annually. When that figure is used instead of the maximum of 8760 hours of operation per year, the maximum allowable emissions are 2.08 tons per year, which is an increase of 0.9 tons per year over what would be allowed under the existing regulation (P.C. No. 6).

Regarding the RACT determination, the Agency believes that many technical issues have been addressed but that additional evidence regarding the benefits of the continuous automatic stoking technology be submitted, preferably by the City of Chicago. The Agency believes that the economic information is very weak (P.C. No. 5, pp. 10-11). Basic responds that it is inappropriate for the Agency to question the DENR's determination regarding the economic aspects of the regulation (P.C. No. 6).

The Board will propose, for first notice, the regulatory language in the Agency's final comments, which is acceptable to Basic (P.C. No. 6). The Board believes that the record supporting this rule is adequate to proceed to first notice and that it is desirable to propose a rule that will accommodate this new technology as applied to pathological incineration. By proceeding to first notice, the Board specifically requests that the USEPA provide comments regarding the approvability of this proposed regulation.

The technical record in this proceeding is extremely well developed, which is appropriate because the Board believes that the ultimate issue is technical in nature. Basic and the Agency have approached the issue from two different methodologies; the Agency from a theoretical basis and Basic from a more empirical basis. Both approaches are valid in coming to a decision in this matter. In a like manner, Basic proposes a different method of calculating emissions than the existing concentration based method. Both the mass emission approach and the concentration based approach are valid; each has merits depending on what type of process it is applied to. Basic has made a good case that the mass emissions approach is more appropriate for continuous stoking pathological waste incinerators systems than the concentration based approac, while not increasing actual emissions.

The Board recognizes that batch incinerators can "cluster" CO_2 emissions during a stack test through sequence charging, based on evidence presented by Basic. This proposition is supported by the carbon balances that were calculated from previous stack test reports which show values higher than 100%. The concentration based approach could inequitably treat an incinerator with a continuous feed system, such as a Basic incinerator.

Clearly, an argument that the existing regulation allows "fudging" of CO_2 levels with one type of incinerator but not another would be inadequate to support a rule change. However, Basic has demonstrated by comparison of concentration based emissions to mass emissions data obtained during previous stack tests that actual emissions will be equal to or lower than currently permitted emission levels. The Agency critizes some of the empirical data upon which Basic's arguments are based as

being old or "not approved" by the Agency. It would appear to the Board that it is better in this situation to try to review as much of the admittedly limited data as possible rather than narrow the analysis.

The rule, as proposed at first notice, incorporates numerous safeguards to ensure that emission will be no greater than under existing Section 212.181. Section 212.185(d) requires that emissions must be equivalent to those permitted under Section 212.181(d). The proposed method of Agency permitting via two stack tests and a comparison of emissions seems workable and will effectively implement the intent of Section 212.185(d).

Regarding the approvability issue, the Board feels that this is fundamentally addressed by the demonstration of equivalency between the existing rule and the proposed rule. If USEPA accepts the demonstration that operating under a mass emissions regulation will result in emissions less than or equal to the SIP approved concentration based regulation, then the proposed rule should be approvable. Additionally, if the rule is equivalent to a rule that is considered RACT, then it too should be RACT. Further evidence regarding the advantages of the Basic incinerator system would not shed more light on the real issue of whether there is a tightening or a loosening of particulate emission levels. The fact that Basic is currently in negotiation with the City of Chicago to replace the existing batch units at Goose Island seems to demonstrate the desirability of the system in the market place.

The standard that this Board must follow in promulgating rules is technical feasibility and economic reasonableness. Clearly operating without charcoal, which the proposed rule will facilitate, is technically feasible as the system was designed to utilize natural gas. The record indicates that natural gas is more desirable from an economic and health standpoint. The proposed rule will also be economically reasonable as a result of decreased labor and materials required for operation.

The Board is concerned with the approvability of this proposed rule as a SIP revision. However, the best course of action is to proceed to first notice and specifically, request USEPA comments and suggestion. The merit and economic record in this proceeding is complete. The issue of approvability by USEPA can only be joined by taking some sort of formal action. Therefore, the Board by this Opinion and Order proposes a rule for first notice. This will provide all participants and USEPA something concrete to comment on and make suggestions. If further development of the record is necessary as a result of comments received, then this can be done during first notice.

ORDER

Proposed 35 Ill. Adm. Code 212.185 is directed to the Secretary of State for first notice publication in the Illinois Register.

Section 212.185 Continuous Automatic Stoking Animal Pathological Waste Incinerators

a) For purposes of this section, the following definitions apply: "Animal Pathological Waste" means waste composed of whole or parts of animal carcasses not exceeding ten percent by weight of other materials such as plastic, paper wrapping and animal collars. "Animal" means any organism other than a human being of the kingdom, Animalia, distinguished from plants by certain typical characteristics such as the power of locomotion, fixed structure and limited growth, and non-photosynthetic metabolism. "Continuous automatic stoking" means the automatic moving of animal pathological waste during burning, by moving the hearth in a pulse cycle manner, which process is designed to provide a continuous burning rate in which the design charging rate per hour equals the burning rate every hour without limitation, and results in emission rates which are similar over any hour of the burning process.

b) Section 212.181 shall not apply to continuous automatic stoking pathological waste incinerators if all of the following conditions are met:

1) The incinerator shall burn animal pathological waste exclusively, except as otherwise prescribed by the Agency during specified test operation.

2) The incinerator shall burn no more than 907 kilograms (2000 pounds) of waste per hour.

3) The incinerator shall be multi-stage controlled air combustion incinerator having cyclical pulsed stoking hearth.

c) No person shall cause or allow the emission of particulate matter into the atmosphere from any incinerator, as defined in this section, to exceed 1 gram of emission per 1 kilogram of animal pathological waste charge (0.1 lb/100 lb).

d) The particulate matter emissions produced when burning animal pathological waste using gaseous auxiliary fuel shall not exceed the pound per hour emission rate equivalent to the maximum concentration rate set forth

in Section 212.181(d), when applied to burning a maximum of 2000 lb of mixed charge animal pathological waste plus solid waste for demonstration of compliance. "Mixed charge" shall contain no more than 25% by weight of solid waste other than animal pathological waste.

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 20th day of June, 1986, by a vote of 7-0.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board