

ILLINOIS POLLUTION CONTROL BOARD
July 19, 1984

IN THE MATTER OF:)
PARTICULATE EMISSION LIMITATIONS)
RULE 203(g)(1) AND 202(b) OF) R82-1
CHAPTER 2)

PROPOSED RULE. FIRST NOTICE.

PROPOSED OPINION AND ORDER OF THE BOARD (by J. D. Dumelle):

On January 1, 1982 the Board proposed the readoption of Rules 203(g)(1) [now codified as 35 Ill. Adm. Code 212.201-212.204] and 202(b) [now codified as 35 Ill. Adm. Code 212.123] of Chapter 2 [now 35 Ill. Adm. Code, Subtitle B]: Air Pollution. These rules concern limitations upon particulate emissions for fuel combustion emission sources using solid fuel exclusively. Hearings were held to consider the merits and economic impact of these rules on April 13 and April 21, 1982 and August 3, August 12, and September 29, 1983. The public comment period closed on February 2, 1984.

THE PROPOSED RULES

The Board has proposed the readoption of Rules 203(g)(1) and 202(b). Rule 203(g)(1) establishes emission limitations for fuel combustion sources that use solid fuel exclusively. It consists of four subsections, three of which apply to sources constructed before April 13, 1972 (existing sources) and one of which applies to sources constructed after that date (new sources). For existing sources in the Chicago Major Metropolitan Area (MMA) the proposed rule sets an emission limitation of 0.1 pounds of particulates per million British thermal units (lbs./mBtu) actual heat input. Outside of the Chicago MMA, a sliding scale operates: sources larger than 250 mBtu/hr. actual heat input would be subject to the 0.1 lbs./mBtu standard, but sources under 10 mBtu/hr. actual heat input could emit up to 1.0 lbs./mBtu. Intermediate-size boilers would be limited within that range as established by a specified equation. Subparagraph (C) of 203(g)(1) provides for exceptions to the strict limits of the rule. It allows greater emissions for existing sources if the rate is consistent

The Board wishes to express its appreciation to late Board Member and Vice Chairman Irvin Goodman for his work on these regulations over the years until his death during this proceeding, to Marili McFawn for her service as hearing officer and to Lee R. Cunningham for his assistance in drafting the Opinion and Order.

with original design or performance tests. The last section of 203(g)(1) specifies that emissions from new sources shall not exceed 0.1 lbs./million Btu heat input. Rule 202(b) relates to visual emission standards. In general it forbids emissions with an opacity greater than 30%, although exceptions are provided during specified periods of time.

INVALIDATION OF PARTICULATE AND OPACITY RULES

Regulations controlling emissions of air pollutants were adopted by the Board on April 13, 1972, in R71-23 as Part II of Chapter 2. Commonwealth Edison subsequently filed a petition in the First District Appellate Court seeking review of several of those rules, including Rule 203(g)(1): Particulate Emission Standards and Limitations for Fuel Combustion Emission Sources Using Solid Fuel Exclusively. The Appellate Court in Commonwealth Edison Company v. Pollution Control Board, 25 Ill. App. 3d 271, 323 N.E. 2d 84 (1975), reversed the adoption of those rules and remanded them to the Board for further consideration with instructions either to validate them in accordance with Section 27 of the Environmental Protection Act (Act) or to prepare proper rules as substitutes. In its opinion the Appellate Court was "unable to state that the Board took into account the technical feasibility of these rules," and that "there is no evidence that the Board took into account the economic reasonableness of these rules for a substantial number of the generating units in this state." The Court concluded that the regulations were not promulgated in accordance with Section 27 of the Act and were, therefore, arbitrary and unreasonable. The Court also instructed the Board to review any new evidence for the purpose of validating or modifying the rules.

The Appellate Court decision was appealed by the Board to the Illinois Supreme Court. Commonwealth Edison Company v. Pollution Control Board, 72 Ill.2d 494, 343 N.E. 2d 459 (1976). The Supreme Court, rather than reviewing the record and Board Opinion to determine whether the Board had complied with Section 27 of the Act in promulgating the regulations, declined "to determine the validity of Rules 203(g)(1). . . on the basis of evidence adduced at hearings held in 1970, 1971 and 1972 and the Board's opinion of April 13, 1972." Instead, it affirmed the Appellate Court's reversal and remanded for further consideration, citing the Appellate Court's reference to the "wealth of new information" that had been gathered in the Board's inquiry hearings and hearings on Board and Agency proposals to amend Rule 204 (R74-2 and R75-5, respectively).

On April 8, 1976, the Board entered an Order in R71-23, reopening the record for the purpose of validating Rule 203(g)(1)

and ordering the record in the consolidated proceedings, R74-2 and R75-5, to be incorporated into the record in R71-23. Two subsequent hearings were held on R75-5 and R74-2, consolidated, in May, 1976. The Board took the position that further hearings were unnecessary in order to comply with the Supreme Court's mandate which invited the Board to validate the regulations in question in light of information gathered at the hearings held subsequent to the original proceedings. The Board reviewed the testimony and exhibits in the three proceedings and, based on the information available in these records, and taking into consideration the issues identified by the Courts, validated Rule 203(g)(1) on July 7, 1977.

The validation of the rule was, however, unsuccessful. On September 27, 1978, the Third District Appellate Court again struck down the rule finding that the Board had failed to consider intermittent control systems, had failed to have an economic impact study prepared, presented and considered and had improperly considered a report (the "Marder Report") which included references to material not of record, without affording an opportunity for opposing viewpoints to be presented (Ashland Chemical Co. v. Pollution Control Board (1978) 64 Ill. App. 3d 69). The Board did not appeal that decision. The Board did, however, attempt to appeal a similar decision in the First District, but was precluded from doing so by the Supreme Court which held that the Board was estopped from such appeal because it had failed to appeal the Ashland, above decision which concerned the same issues. [The Illinois State Chamber of Commerce, et al. v. The Pollution Control Board (67 Ill. App. 3d 839, 384 N.E. 2d v 922(1978))].

Then, on February 4, 1982, the Supreme Court struck down Rule 202(b), the opacity rule, in the case of Celotex Corp. v. Illinois Pollution Control Board et al. (445 N.E. 2d 752 (1983)), on the basis that the Board had relied upon its finding of economic reasonableness and technical feasibility regarding the then invalid Rule 203(g)(1) in support of the opacity rule. The Court concluded that since that finding had been held invalid regarding Rule 203(g)(1), that it was necessarily invalid regarding the opacity rule as well.

Old Rule 203(g)(1) and 202(b) have remained invalid ever since these decisions and it is in this context that the present proceeding arose.

ACTIONS TAKEN IN RESPONSE TO COURTS' CONCERNS

During the lengthy legal history of the invalidated rules at issue here, the issues which have formed the bases of the

invalidations have been the lack of an economic impact study, the perceived failure to consider the economic reasonableness of simultaneous compliance with the sulfur dioxide and particulate rules, the failure to consider intermittent control systems and the reliance on the "Marder Report" without allowing opposing viewpoints to be heard. In the present proceedings, the Board has attempted to respond to each of these concerns.

First, an economic impact study has been prepared, submitted, and considered at hearings. Entitled "The Economic Impact of Repromulgating the Remanded Particulate Regulations 203(g)(1) and 202(b), R82-1," it was entered as Exhibit #10 on August 3, 1983, and was considered at hearings on that date, as well as on August 12 and September 29, 1983. An addendum was submitted in response to the hearing officer's request at the September 29, 1983 hearing as Exhibit #17.

Second, the Board hereby incorporates by reference the entire record of proceedings in R71-23, R74-2 and R75-5, except for the Marder Report, which was prepared by Marder and Associates under contract to the Agency to facilitate validation of the rules in response to the Supreme Court's remand. That report is an abstract which reviews the record of three proceedings before the Board R71-23, R74-2, and R75-5. It organizes the information by subject, summarizes testimony and exhibits, and identifies where each item is found in the record. While it was felt to be a useful tool, there may be some information in it which was not otherwise part of the record, and its deletion should preclude any question regarding its propriety in this proceeding.

Third, the Board has considered the question of simultaneous compliance with the sulfur dioxide and particulate rules. The hearing held on April 13, 1982, in particular, focused on that issue, largely through the testimony of Berkley Moore, an engineer with the Air Quality Planning Section of the Division of Air Pollution Control of the Illinois Environmental Protection Agency. This issue will be discussed later in this Opinion.

Fourth, the Board has not considered intermittent control systems since no one has offered such a proposal in this proceeding and since "the degree of emission limitation required for control of any air pollutant under an applicable implementation plan . . . shall not be affected in any manner by . . . any intermittent or supplemental control of air pollutants" pursuant to Section 123 of the Clean Air Act (42 U.S.C. 1857, et seq.). Additionally, Section 9.1(a) of the Environmental Protection Act requires the State to avoid the adoption of rules which contradict the Clean Air Act. Therefore, even if the Board were to consider

such systems, it could not allow such consideration to affect the emissions standards which it promulgated. Finally, former Section 10(h) of the Environmental Protection Act (Act), which mandated the Board to consider such systems, has been deleted and in pertinent part has been replaced with a provision which states that "emission standards for existing fuel combustion stationary emission sources located in all areas of the State of Illinois, except the Chicago, St. Louis (Illinois) and Peoria major metropolitan areas . . . shall allow all available alternative air quality control methods consistent with federal law" (Section 10 of the Act).

The Board, therefore, believes that all of the flaws perceived by the courts have been remedied in this proceeding.

REGULATORY NEED FOR THE RULES

Particulates and sulfur dioxide are criteria pollutants for which ambient air quality standards have been adopted by the United States Environmental Protection Agency (USEPA) under Section 109 of the Clean Air Act. The ambient standards were set at levels intended to protect the health of the general public (primary standards) and to prevent damage to property, vegetation, or other aspects of the public welfare (secondary standards). The levels set were based on air quality criteria with "an adequate margin of safety" included for the primary standard. (See Board opinion in R72-7 Air Quality Standards, 18 PCB 89, July 10, 1975).

Under Section 110 of the Clean Air Act the states are required to prepare State Implementation Plans (SIPs) containing control strategies for attaining the ambient air quality standards. An important part of the SIP is to establish emission standards for each of the criteria pollutants. [See Section 110(a)(2)(B)]. The Board has repeatedly attempted to establish such standards, but all such attempts have been rebuffed by the court system. As a result, USEPA has twice issued Notices of Deficiency, once in 1974 after Commonwealth Edison had challenged the original rules, and again on July 12, 1979, after the rules had been successfully attacked by Ashland Chemical. As a result, USEPA could impose sanctions upon Illinois for its failure to establish enforceable particulate standards, including impounding federal highway funds and prohibiting industrial expansion pursuant to Sections 176 and 316 of the Clean Air Act. In order to avoid these sanctions, and in order to meet the mandate of the Section 9.1(a) of the Environmental Protection Act to avoid conflicting State and federal regulatory systems, particulate regulations must be adopted.

PARTICULATE EMISSIONS CONTROL TECHNOLOGY

There is substantial documentation in the R71-23 record that technology to control particulate emissions is well established. The four principal control devices are cyclones, wet scrubbers, electrostatic precipitators (ESP), and fabric filters (or baghouses). These devices can be used alone or in combination to attain the desired removal efficiencies (R71-23, Ex. 32). When burning coal with a 10% ash content and 10,000 Btu/lb heat content, removal efficiencies of 90% to 99% are required for compliance with the 0.1 lbs./mBtu actual heat input emission standard, depending on the type of boiler being used (R71-23, R.295-303, Ex. 11).

The most widely used technology for particulate control on large boilers is ESP (R71-23, Ex. 32) which involves passing the flue gas through an electric corona as the flue gas flows through the precipitator, placing a charge on the ash particles, pulling the particle out of the gas to collect on plates in the precipitator, and periodically rapping the particles off the plates. Collection efficiency of an ESP depends on, among other factors, the resistivity of the ash being collected, the temperature of the flue gas, and the velocity of the flue gas through the precipitator. ESP's are able to achieve more than 99% removal in utility operations (R71-23, Ex. 32, 33 34, 35).

Testimony of representatives of utilities and industry verified their ability to achieve the particulate emission standards (R71-23; pp. 2074-82, 3842-43, 2285-6, 2308-10, 2465-66). Existing sources which are not presently in compliance with the proposed rule may require modification of already operating ESP's to comply with the regulation, and continued compliance over time would require proper operation and maintenance of the equipment. However, as an example of potential ESP life and efficiency, a unit built in 1929 by Commonwealth Edison at a design removal efficiency of 82-83% was running close to 98% efficiency in 1971 as a result of several rebuildings (R71-23, pp. 3867-68).

SIMULTANEOUS COMPLIANCE

As stated above, the effectiveness of an ESP is dependent upon the resistivity of the ash being collected. That resistivity is, in turn, affected by the sulfur content of the coal which is burned: the higher the sulfur content of the coal, the less resistive the ash and the higher the efficiency. However, the higher the sulfur content of the coal, the greater the difficulty of meeting the SO₂ standards. This is one of the

problems that the courts found the Board had not adequately addressed: simultaneous compliance with both the particulate and sulfur dioxide emission standards. Testimony was given that if a facility burned low sulfur coal (less than 1% sulfur content) as a means to comply with the SO₂ emission standard, its ESP collection efficiency would drop² substantially because of the higher resistivity of the fly ash. Mr. Andrew Bhan, testifying on behalf of the Agency in R75-5, discussed the difference in resistivities between high and low sulfur coals. The generally accepted theory for this difference is that sulfur trioxide (SO₃) in the flue gas reduces fly ash resistivity, and that SO₃ is virtually absent from the low sulfur coal flue gas. A comparison of flue gas concentrations shows 50 ppm SO₃ from 3.5% sulfur coal and 5 ppm SO₃ from 0.5% sulfur coal (R75-5, pp. 539-42). A test conducted by Commonwealth Edison showed that particulate emissions increased from 0.16 to 0.26 lbs./mBtu when the coal sulfur content was reduced from 2.0% to 0.8% (R71-23, pp. 2079-80). The experiences of several other facilities attempting to control particulates while burning low sulfur coal were described in other testimony (R71-23, pp. 1705-10).

At the April 13, 1982, hearing in R82-1, Berkley Moore introduced Exhibits 1 and 2 regarding the issue of simultaneous compliance. He testified that those exhibits "show that there are a great number of sources that are in fact right now in compliance with both" the sulfur dioxide and particulate rules (4/13/82, p.9). Exhibits 1 and 2 are tables listing compliance data for all sources which must simultaneously comply with the sulfur dioxide and the particulate rules. Given that the Board has now adopted relaxed sulfur dioxide rules applicable to some of these sources, all sources listed in those exhibits are in compliance with the sulfur dioxide standards.

In the Chicago MMA, 10 of the 52 sources or 19% are out of compliance (4/13/82, R.14 and Ex.1). Of those 10 which are out of compliance, 8 are not ordinarily operated. Of the two remaining sources the Commonwealth Edison-Waukegan 3255 mBtu/hr. facility requires 98.20% control and is attaining 98.00% control and its Will County 1728 mBtu/hr. facility requires 86.00% control and is attaining 85.00% control (4/13/83, Ex.1). In the Peoria and St. Louis MMA's 10 of the 83 sources or 12% are out of compliance (4/13/82, R.15 and Ex.2). Of those 10, 3 are ordinarily not operated. Celotex has 2 sources requiring 96.44% control which are attaining 94.00%; CILCO-Edwards has two facilities requiring 97.98% and 98.48%, both of which are attaining 95.00%; CILCO-Wallace has 2 facilities requiring 97.44% which are attaining 94.00%; Commonwealth Edison-Powerton has one facility requiring 96.77% control which is attaining 95.71% control, and

the Mascoutah power plant requires 85.68% control and is attaining 80.00% control (4/13/82, Ex.2). Other sources around the State need not comply simultaneously with 203(g)(1) and 204(c)(1)(A) [4/13/82, R. 16].

Mr. Moore concluded:

It is pretty clear . . . that the number of sources not complying with the particulate limit is pretty much the same whether or not simultaneous compliance with 204(c)(1)(A) is also an issue. . . . The issue of simultaneous compliance apparently doesn't really affect the ability or the willingness of sources to comply with the particulate limits.

To be fair. . . the larger sources with electrostatic precipitators, . . . [had] a bit more difficulty . . . [in complying] with the particulate limit when they were burning low-sulfur coal. The Agency has always admitted that this is the case. . . . But we do say that they can and do comply.

(4/13/82, R. 17-18)

The record demonstrates, as the Board found in R71-23 (see esp. 27 PCB 61 et seq.), that there are available techniques for facilities with existing ESP equipment which are technically feasible and economically reasonable to attain simultaneous compliance, the most reasonable being flue gas conditioning. At least four methods of conditioning are available, including the use of sulfuric acid, liquid sulfur dioxide, sulfur burning and liquid sulfur trioxide. As the Board found in R71-23:

The information presented to the Board readily allows us to conclude that particulate control technology is very well developed, and it is capable of achieving simultaneous compliance with particulate and sulfur dioxide emission standards. The "worst case" for simultaneous compliance is when an existing facility in one of the three major metropolitan areas (MMA's) is switched from high (3.5%) to low (less than 1%) sulfur coal to comply with the 1.8 lbs./MMBTU [mBtu] SO₂ standards. Flue gas conditioning is available for use in these cases, and can be installed within fairly short time periods and with modest costs, installation, and operating requirements. Hot precipitators may also be used, depending on site design and costs involved.

We also note that there are many sources which do not face the worst case conditions. Simultaneous

compliance for smaller existing sources may not be a problem if they are not using an ESP for particulate control, but rather are using another device not affected by changes in ash conductivity. New facilities burning low sulfur coal will be able to design their particulate control systems using the available removal devices as necessary to comply with the standard. Large sources outside of the MMA's are subject to a 6 lbs./MMBTU [mBtu] sulfur dioxide standard, for which they would probably use washed coal. The change in ash resistivity would be small at the sulfur content of washed coal, with a similarly small effect on ESP efficiencies. There may also be sources using a low sulfur coal which has a low ash content, such that even at lower ESP efficiency there would be less ash to remove from the gas, with no net change in emissions.

(27 PCB 63-64)

Nothing in the record of this proceeding merits any change in those findings.

Based on this evidence, the Board finds that it is clearly technically feasible to simultaneously comply with the proposed particulate rule and the sulfur dioxide rule since the large majority of affected sources are already doing so. That same evidence also goes a long way toward demonstrating the economic reasonableness of the particulate rule. However, there is considerably more information to consider in that regard.

ECONOMIC IMPACT OF PROPOSED RULES

The Executive Summary of the Economic Impact Study (EcIS) in this matter concludes:

Because so few sources remain out-of-compliance, repromulgation of rules 203(g)(1) and 202(b) is not expected to impact very noticeably on the Illinois economy. Hence Board approval of R82-1 should have little effect on the overall availability of goods and services to the people of the state, nor should it have much impact on agriculture, local government, commerce or industry. Of course, if the avoidance of nearly \$400 million in Clean Air Act penalties is assumed to result from revalidation, then it follows that all of those sectors will experience a significant benefit in the form of averted funding losses and the associated secondary effects. (Ex. 10, p. vi).

The reason for such widespread compliance with invalid Rule 203(g)(1) is that the Agency, in its permitting process, has acted almost as though the rules had never been invalidated. Despite the fact that the Agency no longer had valid rules on which to base permitted levels of particulate emissions, it established a policy, which it filed with the Secretary of State's office in December of 1977, stating that compliance with 203(g)(1) still would "usually be deemed . . . sufficient to assure compliance with the air quality provisions . . . of the Act." According to these guidelines, a plant may obtain a permit by either demonstrating compliance with the remanded rules or by performing comprehensive air quality evaluations to demonstrate that alternative emission's limitations would not threaten air quality standards. Since this policy has been in effect, only the Winnetka Electric Plant has been granted an alternative standard.

The EcIS proceeded on the assumption that "repromulgation is assumed to have no impact on those sources already in compliance" (Ex. 10, p. 14). It therefore, discusses costs imposed on those facilities which have not achieved compliance, those which are presently permitted to emit as much as 0.2 lbs/mBtu under 203(g)(1)(C) but which will ultimately be required to comply with a stricter limitation, the Winnetka plant which is operating under a relaxed limitation, and new sources (Ex. 10, pp.16-18). Of the 30 sources which are not presently in compliance, 12 operate routinely, 9 are used on a standby basis and nine are shut down (Ex. 10, p. 53). Eleven are in non-attainment areas for particulates; five are in attainment areas (Ex. 10, pp. 53-56).

The authors of the EcIS admit that assigning an economic value to the costs and benefits involved in this proceeding is difficult. On the cost side, errors arise from choosing an emission reduction strategy. The study assumed the use of fabric filters or cyclones resulting in an annualized cost of control for the affected sources of about \$4.4 million in 1982 dollars with a range of error of about 50 percent. However, some of the 30 sources impacted by repromulgation have shut down within the past five years and many, if not most, may never operate again, regardless of the Board's ruling in this matter. Further, an equal number of sources are used as emergency standby units, which the operators may choose to retire. Thus, only 12 sources which are out-of-compliance with the remanded rules operate on a routine basis, with an annualized control cost of about \$4.42 million, most of which is attributable to CILCO's Wallace Station.

The benefits of repromulgation are also subject to

considerable uncertainty, especially in the estimation of reduced damages to health and welfare. Dispersion modeling indicates that in all but three locations, promulgation of the proposed rules will reduce ambient TSP concentrations by less than 1 ug/m^3 on an annual average, with the greatest predicted increment being 5.4 ug/m^3 . The estimated health and welfare benefits are \$73,000 per year in 1982 dollars, although that figure must be regarded as a lower limit since only those impacts greater than 1 ug were evaluated. Significant errors may arise from uncertainties in the damage coefficients themselves which are based on the work of Dr. Allen Cohen who has conceded that they could offer no better than "order of magnitude" accuracy: i.e. they could vary by a factor of ten.

Potentially overriding any of these costs or benefits is the impact which would result from a decision by the Administrator of USEPA to impose the Clean Air Act's sweeping penalties. The deficiency in Illinois' SIP due to judicial remand is cause for the sanctions. While there has been no recent indication that such sanctions will be imposed in the near future, Illinois' inability to show attainment with TSP air quality standards exposes the State to a possible loss of up to \$335 million in highway funds, \$35 million in sewage treatment grants, and nearly \$12 million in Agency operating funds. In that case the benefits of revalidation clearly outweigh the costs.

VISUAL EMISSION STANDARDS

When the Board originally adopted visual emission standards in R71-23 (4 PCB 309, April 13, 1972) it stated:

Standards based upon the visual appearance of an emission are long-standing, familiar, and relatively unsophisticated. They were much assailed by industry during our hearings, largely because of their subjective nature. E.g., Bergren, Armour, and Quon (R 70-15, pp. 619-21, 656-57, 1128). On the other hand, pending considerable improvements in scientific monitoring practices, in many cases the appearance of an opaque plume may be the best available evidence of improper operation. With all its drawbacks, therefore, the visual standard is an indispensable enforcement tool. Moreover, the appearance of an emission relates directly to esthetic concerns, which should not be overlooked in air pollution control.

The technical feasibility of complying with the 30% opacity standard was established in R71-23 (R. 8/12/83, pp. 253-257, and 300). Mr. Gaddam Reddy, an Agency employee, described the cal-

culations which he performed and concluded that six different types of boilers, each using coal of different ash content, could meet the proposed opacity standard of 30%. Mr. Pat Dennis, an Agency permit analyst, testified that "it is a rare occurrence when a boiler meets the particulate limits of 203(g)(1) but exceeds the 30% opacity limit of Rule 202(b)" (R. 8/12/83, 398). Further, the large majority of sources have been in compliance with the proposed 30% opacity limitations.

The opacity regulations, as noted above, were struck down on the basis that the finding of economic reasonableness of adopting the opacity limitations was premised on the association between the particulate standards and opacity limitations. Since that finding was set aside by the courts with respect to the particulate standards, it was also set aside with respect to opacity. However, the Board has now again found the particulate standards to be economically reasonable and technically feasible and that compliance with those standards will enable affected sources to comply with the opacity limitations. It, therefore, concludes that compliance with the opacity limitations is economically reasonable and technically feasible, and proposes the readoption of those rules.

THE EXEMPTION PROVISION

Proposed rule 35 Ill. Adm. Code 212.203 retains the exemption provision of old Rule 203(g)(1)(C) adopted in R71-23 which provides that sources with an emission rate based on original design or equipment performance test conditions or in compliance with certain variances may degrade as much as 0.05 lbs./mBtu from the stricter of either the original design or equipment performance test conditions. The intent of the degradation provision is to recognize "the equities in favor of those who have recently made substantial expenditures in order to bring their emissions close to but not quite within those permitted by the new general rule" (R71-23 Op., 4 PCB 324, April 13, 1972).

Illinois Power Company (IPC), however, argues that the intent of the rule could be undermined by a change that has occurred in Agency test methods. IPC alleges that equipment performance tests done by IPC and others were not always conducted at full load, as the Agency now requires, and that such tests may be more meaningfully compared to original design specifications than to equipment performance test conditions at less than full load. Therefore IPC requests that the Board amend proposed Section 212.203 to allow the use of the "more representative" of either the original design or equipment performance test conditions for the purpose of making the threshold determination of whether a source qualifies for the exemption provision.

IPC further argues that current test methods yield greater degradation than the test methods employed at the time of the original equipment performance tests, and that apparent excessive degradation may be caused by the change in test methods rather than by actual degradation. IPC admits that the "most precise means" of curing this problem is to allow affected facilities to demonstrate a lack of excessive degradation through testing performed under load conditions equivalent to the original performance test conditions, but argues that such a mechanism would involve added costs and be difficult to administer (IPC brief, 2/10/83, pp. 9-10). It, therefore, proposes the "much simpler means" of allowing sources which qualify for the Section 212.203 exemption except for failing to meet the 0.05 degradation criteria to be subjected to a limitation of 0.2 lbs./mBtu as measured by current test methodology, regardless of original design or performance standards.

The Agency opposes these changes. It argues that IPC's own data fails to support its conclusions that the intent of the degradation provision is being circumvented by changes in the Agency's testing requirements either as to load or test method, and that there are numerous sources which qualify under the degradation provision as originally adopted. Pat Dennis testified that he has not witnessed any significant problems of affected power plants unable to meet the degradation rules because of the difference in the tests, and that while age affects degradation, so does maintenance (R. 9/29/83, 496). Further, the Agency argues that the record does not support the proposition that IPC's proposed amendments would not jeopardize air quality.

The Agency admits that the air quality demonstration performed by IPC may indicate that some rural sources could increase emissions by 0.1 lbs./mBtu without significantly impacting air quality, but that the exemption provision also applies to sources in MMAs and nonattainment areas. Any proposed regulations which would permit an increase in allowable emissions for sources in such areas, it argues, must be scrutinized. The Agency has identified sources in the three MMAs whose allowable emission limits could be increased if the Board were to adopt the IPC amendments (Ex. 15), and points out that the impacts of these increases have not been addressed on the record. Finally, the Agency urges the Board to adopt the exemption provision as proposed in its order of January, 1982, primarily because it is technically feasible and economically reasonable for affected sources to comply with it.

The Board agrees with IPC that there are difficulties in comparing the results of the earlier and current test methods

(see R. 8/12/83, 244-255 and 270-273). The Board also agrees that these changes have not been quantified, although there is reason to believe that current test methods yield higher emission levels (R. 8/12/83 248). The Board does not agree, however, with all of IPC's amendments proposed to remedy this problem.

IPC's proposal that allowable degradation be calculated in comparison to the more representative of either the original design or equipment performance test conditions rather than the stricter of the two has merit, but is also rather vague. Therefore, the Board will propose language which will mandate the use of the stricter conditions, except that if the equipment performance test conditions are stricter, but are based upon less than full load operation, while the original design conditions are based upon full load operation, the original design conditions may be used to determine the level of degradation.

The Board does not, however, agree that sources qualifying for the Section 212.203 exemption should be simply limited to 0.2 lbs./mBtu as measured by the current test method rather than that of an increment of 0.05 lbs./mBtu up to a limit of 0.2 lbs./mBtu. While there is evidence demonstrating that the IPC proposal should not jeopardize air quality standards (R. 8/12/83, 302-303), common sense dictates that an increase in allowable emissions will have some impact upon air quality. Such an increase should not be permitted absent some showing that it is necessary to effectuate the intent of the exemption. The present record contains no such evidence.

The Village of Winnetka argues that simply limiting qualifying sources to 0.25 lbs./mBtu would be appropriate rather than the 0.2 lbs./mBtu figure. While the Board has rejected both "simple" approaches, the Village's comment does point out an ambiguity of the rule as proposed. The introductory language of Section 212.203 appears to prohibit emissions greater than 0.2 lbs./mBtu, whereas subsections (a) and (b) appear to allow 0.2 plus 0.05 or 0.25 lbs./mBtu. The Board finds that the Village's interpretation is the correct one and will amend the introductory language of Section 212.203 to clarify the ambiguity.

Finally IPC's suggestion (which it has not proposed due to the expense of testing) that a source be allowed to run emission tests under the same conditions as the original test (i.e. at some percentage of full load) would effectuate the intent of the exemption. Therefore, the Board will propose to allow sources to use comparison testing to establish compliance with the exemption.

ADJUDICATORY SITE-SPECIFIC RELIEF

IPC also proposes adding a mechanism to Section 212.203 whereby site-specific alternative standards could be established to give relief to those emission sources otherwise unreasonably impacted by that section. The proposed mechanism would allow an alternative standard to be set in an adjudicatory proceeding patterned after similar provisions contained in 35 Ill. Adm. Code 214.185 and 302.211. The IPC proposal would apply to emission sources located in attainment areas and would require the source to prove that the requested emission rate would not, under worst case circumstances, cause or contribute to a violation of the National Ambient Air Quality Standards for particulates or exceed any applicable increment for particulates under the Prevention of Significant Deterioration provisions of the Clean Air Act.

IPC argues that the emissions standards contained in Section 212.203 were established on a state-wide basis and have not been set so as to take into account the special conditions which may concern individual sources (See R. 8/12/83, 405-07). Consequently, the standards may be more stringent than are necessary for certain sources to attain and maintain air quality (R. 8/12/83 355-56). Senate Bill 1862, which has recently gone to the Governor's desk for his signature, specifically allows the Board to provide by regulation for the subsequent determination of an adjusted standard for persons who can justify such an adjustment consistent with Section 27(a) of the Act. The regulation of general applicability shall specify the level of justification required of a petitioner to qualify for an adjusted standard. Establishing such a procedure by rule is, however, discretionary, and the Board finds that the record contains insufficient support for the establishment of such a mechanism in this rulemaking.

IPC essentially argues two points: first, an adjudicatory proceeding is faster and less expensive than a regulatory proceeding, and, second, that if the proposed standards will leave some increment for growth in attainment areas, such increment could properly be used by a source which is unreasonably impacted by the particulate standards. These same two points could be raised in any proceeding regarding emission standards for criteria pollutants, and similar points could probably be made with respect to any rule of general applicability. Thus, unless SB 1862 is to be read to allow the nearly wholesale avoidance of the otherwise applicable regulatory protections, there must be a greater just-

ification than that which has been presented in this record. As the Agency argues, there must be some showing of special circumstances to justify such expedited procedures, and no such showing has been made here.

WINNETKA SITE-SPECIFIC REQUEST

The Village of Winnetka argues that the record in this matter demonstrates that there is no environmental need for further particulate controls at its power plant, that the proposed rules would impose an unreasonable economic hardship upon it, and that the adoption of rules which would require greater control of emissions from its electric plant would be unlawful.

The Village contends that an August 10, 1983, Hearing Officer Order,

together with evidentiary rulings at the hearings held August 3, 1983, improperly limited its rights to have the Board "make different provisions as required by circumstances for different contaminant sources and for different geographical areas" and otherwise to take into account site specific facts in this general rulemaking, all as mandated by Section 27(a) of the Environmental Protection Act. . . [and] that if Rule 203(g)(1)(A) and 203(g)(1)(C) are adopted as to the Village's plant, the Board will not have performed its duty to "take into account the existing physical conditions the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of existing air quality . . . and the technical feasibility and economic reasonableness of measuring or reducing the particular type of air pollution," all of which it must do before it may lawfully adopt a rule.

(Closing Submissions, 12/10/83, p.7)

The Board disagrees. The Village has no "rights" to have the Board make different provisions for different sources, rather the Board "may do so" (Section 27(a) of the Act). Further, simply because the Board must "take into account. . . the character of the area involved," it need not allow the full presentation of what, in effect, is a showing for site-specific relief. This proceeding can be considered to have been in progress since 1971. Not until August of 1983 did the Village request an additional hearing to consider its facility. That request was denied by the August 10, 1983, Hearing Officer Order. The August 3, 1983 evidentiary rulings referred to were also based upon the hearing officer's perception that the Village was

attempting to enlarge the scope of the proceeding to include site-specific relief for the Village.

The hearing officer's rulings are upheld. The Village was allowed sufficient latitude to present evidence which is relevant to the promulgation of a rule of general applicability which was the purpose of this rulemaking. The Village has no right, and the Board has no duty, to go beyond that. If the Village's reasoning were taken to its logical extreme, the Board would be forced to allow detailed testimony regarding each specific source in the State which could conceivably be affected by a rulemaking proceeding. In effect, the Board could be forced to adopt site-specific rules for each affected source. The Act, through its provisions for variance and site-specific regulations, recognizes that such specificity is not possible.

The Board will not, on the basis of this record, exempt the Village from the proposed general rule.

In a related matter George E. Bullwinkel, on his own behalf and on behalf of certain citizens of the Village of Winnetka, filed a motion on February 2, 1984, to incorporate by reference the hearing record in R80-22, a site-specific sulfur dioxide proceeding filed by the Village. That motion includes objections to any site-specific relief being granted to the Village in this proceeding, and the motion to incorporate appears to be directed at insuring that no such relief is granted. As stated earlier, the hearing officer has attempted to distinguish testimony directed toward site-specific relief and information directed toward a regulation of general applicability and has attempted to exclude site-specific testimony. The Board has upheld that effort and has declined to propose site-specific relief in this proceeding. Therefore, the Board finds that the record in R80-22 is irrelevant and the motion is hereby denied.

PROPOSED ACTION

The Board proposes to readopt the particulate and opacity rules generally as proposed and exactly as they have been codified at 35 Ill. Adm. Code 212.201 - 212.204 and 212.123, except that the Board Notes relating to the invalidation of those rules will be deleted and as noted in this Opinion. The Board declines to establish any expedited procedure for site-specific relief as proposed by Illinois Power and further declines to grant any site-specific relief to the Village of Winnetka in this proceeding. Winnetka may seek relief in a separate proceeding where a narrower focus is possible, or through a variance, which, if filed within 20 days of the adoption of these rules would stay the application of the rules to it.

ORDER

The Board hereby proposes for first notice the repromulgation of 35 Ill. Adm. Code 212.201 - 212.204 and 212.123 as follows (deleted language is lined through):

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE B: AIR POLLUTION
 CHAPTER I: POLLUTION CONTROL BOARD
 SUBCHAPTER c: EMISSION STANDARDS AND LIMITATIONS
 FOR STATIONARY SOURCES

PART 212
 VISUAL AND PARTICULATE MATTER EMISSIONS

SUBPART A: GENERAL

Section
 212.100 Scope and Organization
 212.110 Measurement Methods
 212.111 Abbreviations and Units
 212.112 Definitions
 212.113 Incorporations by Reference

SUBPART B: VISUAL EMISSIONS

Section
 212.121 Opacity Standards
 212.122 Limitations for Certain New Sources
 212.123 Limitations for All Other Sources
 212.124 Exceptions
 212.125 Determination of Violations

SUBPART D: PARTICULATE MATTER EMISSIONS
 FROM INCINERATORS

Section
 212.181 Limitations for Incinerators
 212.182 Aqueous Waste Incinerators
 212.183 Certain Wood Waste Incinerators
 212.184 Explosive Waste Incinerators

SUBPART E: PARTICULATE MATTER EMISSIONS FROM
 FUEL COMBUSTION EMISSION SOURCES

Section
 212.201 Existing Sources Using Solid Fuel Exclusively
 Located in the Chicago Area
 212.202 Existing Sources Using Solid Fuel Exclusively
 Located Outside the Chicago Area
 212.203 Existing Controlled Sources Using Solid Fuel Exclusively
 212.204 New Sources Using Solid Fuel Exclusively
 212.205 Existing Coal-fired Industrial Boilers Equipped with
 Flue Gas Desulfurization Systems
 212.206 Sources Using Liquid Fuel Exclusively
 212.207 Sources Using More Than One Type of Fuel
 212.208 Aggregation of Existing Sources

SUBPART K: FUGITIVE PARTICULATE MATTER

Section
 212.301 Fugitive Particulate Matter
 212.302 Geographical Areas of Application
 212.304 Storage Piles
 212.305 Conveyor Loading Operations
 212.306 Traffic Areas
 212.307 Materials Collected by Pollution Control Equipment
 212.308 Spraying or Choke-Feeding Required
 212.309 Operating Program
 212.310 Minimum Operating Program
 212.312 Amendment to Operating Program
 212.313 Emission Standard for Particulate Collection Equipment
 212.314 Exception for Excess Wind Speed
 212.315 Covering for Vehicles

SUBPART L: PARTICULATE MATTER EMISSIONS
 FROM PROCESS EMISSION SOURCES

Section
 212.321 New Process Sources
 212.322 Existing Process Sources
 212.323 Stock Piles

SUBPART N: FOOD MANUFACTURING

Section
 212.361 Corn Wet Milling Processes

SUBPART O: PETROLEUM REFINING, PETROCHEMICAL
AND CHEMICAL MANUFACTURING

Section
212.381 Catalyst Regenerators of Fluidized Catalytic Converters

SUBPART Q: STONE, CLAY, GLASS
AND CONCRETE MANUFACTURING

Section
212.421 New Portland Cement Processes
212.422 Portland Cement Manufacturing Processes

SUBPART R: PRIMARY AND FABRICATED METAL
PRODUCTS AND MACHINERY MANUFACTURE

Section
212.441 Steel Manufacturing Processes
212.442 Beehive Coke Ovens
212.443 By-Product Coke Plants
212.444 Sinter Processes
212.445 Blast Furnace Cast Houses
212.446 Basic Oxygen Furnaces
212.447 Hot Metal Desulfurization Not Located in the BOF
212.448 Electric Arc Furnaces
212.449 Argon-Oxygen Decarburization Vessels
212.450 Liquid Steel Charging
212.451 Hot Scarfing Machines
212.452 Measurement Methods
212.455 Highlines on Steel Mills
212.456 Certain Small Foundries
212.457 Certain Small Iron-melting Air Furnaces

SUBPART S: AGRICULTURE

Section
212.461 Grain Handling and Drying in General
212.462 Grain Handling Operations
212.463 Grain Drying Operations

SUBPART T: CONSTRUCTION AND WOOD PRODUCTS

Section
212.681 Grinding, Woodworking, Sandblasting and Shotblasting

Appendix A	Rule into Section Table
Appendix B	Section into Rule Table
Appendix C	Past Compliance Dates
Appendix D	Required Emission Reduction Actions

Illustration A	Allowable Emissions from Solid Fuel Combustion Emission Sources Outside Chicago
Illustration B	Limitations for all New Process Emission Sources
Illustration C	Limitations for all Existing Process Emission Sources

AUTHORITY: Implementing Section 10 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111 1/2, pars. 1010 and 1027)

SOURCE: Adopted as Chapter 2: Air Pollution, Rules 202 and 203: Visual and Particulate Emission Standards and Limitations, R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R77-15, 32 PCB 403, at 3 Ill. Reg. 5, p. 798, effective February 3, 1979; amended in R78-10, 35 PCB 347, at 3 Ill. Reg. 39, p. 184, effective September 28, 1979; amended in R78-11, 35 PCB 505, at 3 Ill. Reg. 45, p. 100, effective October 26, 1979; amended in R78-9, 38 PCB 411, at 4 Ill. Reg. 24, p. 514, effective June 4, 1980; amended in R79-11, 43 PCB 481, at 5 Ill. Reg. 11590, effective October 19, 1981; codified at 7 Ill. Reg. _____; as amended at 8 Ill. Reg. _____.

Section 212.123 Limitations for All Other Sources

- a) No person shall cause or allow the emission of smoke or other particulate matter from any other emission source into the atmosphere of an opacity greater than 30 percent.
- b) Exception: The emission of smoke or other particulate matter from any such emission source may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such more opaque emissions permitted during any 60 minute period shall occur from only one such emission source located within a 305 m (1000 ft) radius from the center point of any other such emission source owned or operated by such person, and provided further that such more opaque emissions permitted from each such emission source shall be limited to 3 times in any 24 hour period.

Source: Readopted at 8 Ill. Reg. _____, effective _____.

METRIC UNITS

<u>H (Range)</u>	<u>S</u>
<u>Megawatts</u>	<u>Kilograms per megawatt</u>
Less than or equal to 2.93	1.55
Greater than 2.93 but smaller than 73.2	3.33 H ^{-0.715}
Greater than or equal to 73.2	0.155

ENGLISH UNITS

<u>H (Range)</u>	<u>S</u>
<u>Million Btu per hour</u>	<u>Pounds per million btu</u>
Less than or equal to 10	1.0
Greater than 10 but smaller than 250	5.18 H ^{-0.715}
Greater than or equal to 250	0.1

where:

S = Allowable emission standard in lbs./mBtu/hr or kg/MW of actual heat input, and

H = Actual heat input in million Btu per hour or megawatts

Section 212.203 Existing Controlled Sources Using Solid Fuel Exclusively

Notwithstanding Sections 212.201 and 212.202, any existing fuel combustion source using solid fuel exclusively may, in any one hour period, emit up to, but not exceed 0.39 kg/MW-hr (0.25 lbs./mBtu), if, as of April 14, 1972, either of the following conditions was met:

- a) The emission source has an hourly emission rate based on original design or equipment performance test conditions, whichever is stricter, which is less than 0.31 kg/MW-hr (0.2 lbs./mBtu) of actual heat input, and the emission control of such source is not allowed to degrade more than 0.077 kg/MW-hr (0.05 lbs./mBtu) from such original design or equipment performance test conditions; or,

- b) The source is in full compliance with the terms and conditions of a variance granted by the Pollution Control Board (Board) sufficient to achieve an hourly emission rate less than 0.31 kg/MW-hr (0.2 lbs./mBtu), and construction has commenced on equipment or modifications prescribed under that program; and emission control of such source is not allowed to degrade more than 0.077 kg/MW-hr (0.05 lbs./mBtu) from original design or equipment performance test conditions, whichever is stricter.

Provided, however, that if the original equipment performance test conditions are stricter than the original design conditions and the original design conditions are based upon a greater loading than the original equipment performance test conditions, the original design conditions may be used to determine the level of degradation for the purpose of this Section, and, provided further that a source may conduct equipment performance tests at a load level equal to the load level at which original equipment performance tests were run for use in determining the level of degradation for the purpose of this Section in lieu of any other method for determining the level of degradation allowed by this Section.

Section 212.204 New Sources Using Solid Fuel Exclusively

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new fuel combustion emission source using solid fuel exclusively to exceed 0.15 kg of particulate matter per MW-hr of actual heat input (0.1 lbs./mBtu).

Source: Readopted at 8 Ill. Reg. _____, effective _____.

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 19th day of July, 1984 by a vote of 6-0.



 Dorothy M. Gunn, Clerk
 Pollution Control Board