

ILLINOIS POLLUTION CONTROL BOARD
June 10, 1981

In The Matter Of: Proposed Amendment)
to Chapter 8: Noise Regulations,) R80-9, 10
Rules 101, 206, 208, and 209)

ADOPTED RULE. FINAL ACTION

FINAL OPINION OF THE BOARD (by J. Anderson):

This Opinion is written in support of new Rule 210 and amendments to Rules 101, 206, 208 and 209 of Chapter 8: Noise Regulations, adopted May 28, 1981 by the Board as final rules to become effective June 1, 1981. By letter of May 12, 1981, JCAR stated it had no objections to these rules.

Procedural History

In the original Chapter 8: Noise Regulations, promulgated in 1973, Rule 209(f) exempted "every owner or operator of Class C land" who conducts necessary explosive blasting activities from complying with the sound limitations contained in Rule 206 [R72-2, 8 PCB 653, 702 (July 26, 31, 1973)]. This original exemption was granted because no method was known at that time for bringing blasting noise into compliance with the Rule 206 limits. As a result of the subsequent R76-16 proceeding, the exemption was extended until January 1, 1981. While some techniques to mitigate the air blast and ground vibration of blasting had been developed during the first exemption period, the Board granted the extension because of its agreement with industry, the Illinois Institute of Natural Resources (Institute) and the Illinois Environmental Protection Agency (Agency) that more research was needed to determine the proper descriptor for human response to blasting noise. The single most important piece of research awaited by the parties was a study to be completed by the U.S. Bureau of Mines (USBM) [R76-16, 32 PCB 457, 458 (January 18, 1979)].

On May 15, 1980, the Mining Industry Task Force on Impulsive Noise and Vibration (Task Force) proposed that the Board extend the exemption until June 1, 1983. The Task Force explained that there had been a delay in the USBM research schedule, but that its research report on the "Human Response to Blast Noise and

*The Board wishes to express its appreciation for the assistance of Kathleen M. Crowley, Administrative Assistant to J. Anderson and Hearing Officer herein in the drafting of this Opinion, as well as the aid of William Withrow, Technical Assistant to the Board.

Ground Structure Vibrations" was expected to be completed in mid-1982 (Docket R80-9). On July 10, 1980, the Agency proposed enactment of certain "interim" sound limitations during this waiting period (Docket R80-10).

Each proposal was published in the Environmental Register, R80-9 in #219, June 23, 1980 and R80-10 in #221, August 5, 1980. By its Order of July 10, 1980, the Board consolidated these proposals for the purposes of hearing and decision.

Three hearings were held on the consolidated proposals in the following locations:

Chicago	August 12, 1980
Springfield	August 13, 1980
Chicago	September 24, 1980

Evidence concerning each proposal's merit and economic impact was received at each hearing. Separate economic impact hearings were not held, as the Institute had filed a statement in each case that preparation of a formal economic impact statement was not technically feasible at that time due to lack of economic parameters and essential data which would be available only after completion of the USBM research (R80-9, Ex. 4 dated June 11, 1980 and R80-10, Ex. 9 dated July 21, 1980).

As the final post-hearing submittals were not filed with the Board until October 10, 1980, it became apparent that there was insufficient time remaining before the expiration of the exemption on January 1, 1981 for the Board to initiate and have completed the 90 day, two-step notice procedures required under the provisions of the Illinois Administrative Procedures Act (APA). Accordingly, after its review of the hearing transcripts and exhibits, on December 4, 1980 the Board chose to exercise its emergency rule-making powers under the Environmental Protection Act (Act) as well as the APA to extend the Rule 209(f) exemption as an emergency rule effective through May 31, 1981 (the maximum period allowable by the APA). On the same date however, the Board authorized publication of the APA first notice of a modified version of the Agency's interim sound limitation proposal. Both the emergency exemption rule and the first notice of the proposed interim sound limitation rules appeared in the Illinois Register, Vol. 5, January 2, 1981, at respectively pp. 266-269, and pp. 5-11 as well as in Environmental Register #229, December 18, 1980. The Board decided to extend the exemption on an emergency basis (thereby maintaining the status quo) "to insure that the quarrying industry has ample time to determine first, whether its blasting activities are currently in compliance with the proposed limits, and secondly, how and when compliance can be achieved so that any necessary petitions for variance can be timely filed." R80-9, 10, (Emergency) Order of December 4, 1980.

Second notice of the proposed rules, amended in response to public comments received during the first notice period, was authorized by the Board by its Order of April 2, 1981. Other amendments were made during the second notice period in response to comments made by the Joint Committee on Administrative Rules (JCAR).

The Technical Record

The record in the R76-16 proceeding was incorporated into this record (R. 7). To the extent that technical evidence presented in this proceeding is cumulative to earlier evidence discussed in the Board's R76-16 Opinion, it will not be discussed in detail here.

Both the Agency and the Task Force agree that considerable progress has been made in efforts to develop a better understanding of the human and structural response to explosive blasting, and to develop blasting technologies which will minimize that response (see R76-16 Opinion, p. 3, R. 26-27). While the coal mining and quarry industries had already been voluntarily seeking to reduce noise levels, the federal Office of Surface Mining Reclamation and Enforcement (OSMRE) promulgated regulations applicable only to the surface coal mining industry which were designed to minimize the adverse effect of its blasting activities on building structures, 30 CFR §816.64 and §816.65, 44 Federal Register 15404-405, March 13, 1979. The Illinois Department of Mines and Minerals (IDMM) has adopted identical regulations, and is funded to enforce the federal regulations, §1816.64 and §1816.65, 4 Illinois Register 236-241, September 12, 1980. The numerical limits contained in these regulations are to be measured using the C-weighted, slow response sound descriptor advocated in R76-16 (see Opinion, p. 2-3), as well as by measuring for sound pressure level peaks.

As a result of industries' voluntary and enforced control activities, the number of complaints concerning blasting noise annoyance received by both industry and the Agency has diminished since the completion of the R76-16 hearings (R. 15, 57-60). In the hearings in this proceeding and in R76-16, the Agency and the Task Force agreed that a C-weighted slow response measurement is a better descriptor for response to blast noise than is the A-weighted fast response measurement of current Rule 206 (e.g. R. 108-124, 276-313). There was no testimony or comment suggesting that compliance with the Rule 206 sound limits is any more technically feasible currently than it was in 1973.

The Agency and the Task Force agree that the OSMRE based Agency proposed sound limits "are reasonably related to building structure damage criteria" (R. 15). The Agency believes that compliance with these limits is technically feasible, through use of delay intervals, reduced charges, and proper stemming procedures (R. 128). The Task Force stated that "from a practical viewpoint" it "could accept" the Agency's interim regulations based on OSMRE

limits (e.g. R. 220). Testimony concerning C-slow blast data gathered by the Illinois Coal Association supports these technical feasibility assessments: less than 5% of 594 data points measured under various blast conditions exceeded the suggested 109 dB C-slow limit (R. 251-255, Ex. 5, R80-9, 10).

The ultimate issue at hearing, therefore, became a matter of whether the Board should adopt any sound limitations pending the completion of the USBM "Human Response" study, or whether the Board should extend the previous Rule 209(f) exemption. As discussed in the R76-16 proceeding, and reiterated here, blasting activities produce both air-borne noise and ground-borne vibration. Due to the lack of necessary human response data, it "is difficult, if not impossible, to determine which effect (air or ground) was principally responsible for [a] complaint" about annoyance from blast activities (R. 15). The Task Force accordingly stated that after receipt of results of the USBM research as well as on-going research by industry itself, "it may be that when the Task Force is ready to make its final recommendations, they may go beyond just the question of noise and respond to the entire problem, which includes, also, ground vibrations and where those standards would be" (R. 34). In short, it is the position of the Task Force that no regulations should be issued by the Board until such time as the data exists to develop comprehensive and final regulations which will deal with both human and structural response to blast noise.

It is the Agency's position that a regulatory first step should be taken pending completion of the necessary research, as it is agreed that the OSMRE noise limits "are reasonably related to building structure damage criteria" (R. 15), and it is reasonable to assume that final noise limits based upon human response criteria would be lower, that is, more restrictive (R. 30, 167).

While it agrees with the Agency that the OSMRE-based limitations are reasonable, the Department of Mines and Minerals favored continuation of the exemption for the coal mining industry which is already subject to the OSMRE regulations as adopted and enforced in Illinois by IDMM. It has stated that:

"applying Rule 210 to coal mines will result in 1) an unwarranted burden on the taxpayers of the state due to duplication of effort and enforcement of largely identical rules by two different state agencies; and 2) confusion in enforcement and compliance as a result of those differences that do exist between the PCB Rule 210 and the Department's rules and regulations." (Public Comment 3, and R. 211-13).

This modified exemption approach was also suggested by the Amax Coal Company (P.C. 4).

Economic Effects

As in R76-16, the Illinois Institute of Natural Resources (IINR) determined that it is technically infeasible to do an economic impact study of either proposal at this time, due to lack of necessary research. Some cost information was however developed at hearing held August 12-13 and September 24, 1980, primarily relating to the Agency's R80-10 proposal. These proposed rules were intended to provide relief from the general sound limitations of Rule 206, which cannot be complied with by either the coal mining or quarrying industries. In the broadest sense then, viewing Rule 210 as the only alternative to Rule 206, Rule 210 would represent an economic savings for both industries.

However, both industries have been exempt from Rule 206 since 1973. Passage of Rule 210 will impose no additional costs on the coal mining industry, which is already required to comply with these sound limits pursuant to the aforementioned federal and state mining regulations.

The quarry industry is not federally regulated. However, at hearing, no objection was made by this industry to these Rule 210 limitations. Arvid Tienison of Material Services and Chairman of the Task Force explained that the quarry industry had already taken steps to quiet its blasts to reduce citizens complaints. The quarry industry Task Force members have stated in writing that they are "...willing to accept the OSMRE limits on an interim basis..." (Interim Statement, p. 9, May 15, 1980). The Board therefore assumes there will be little or no economic impact on the quarry industry.

The effect on the Agency's budget is anticipated to be minimal. Agency testimony was that it is currently investigating complaints against quarry cases, and so envisions no extra costs in that respect. As to coal mining, it was pointed out that the Agency "...might be doing some monitoring which the Department of Mines and Minerals is doing. Well, those costs should balance out because if one group is making the measurements, another group wouldn't have to" (R. 183-184).

These regulations impose no duty or additional responsibility on the Department of Mines and Minerals, but coordination of monitoring with IEPA may result in cost savings to that Department.

The Rules As Adopted

Prior to a discussion of the specific rules as adopted, some general remarks should be made. The Board adopted the substance of the Agency's proposals, with some editorial changes, as it has been convinced that the Agency's proposal is in fact a technologically feasible and economically reasonable first step in providing relief from explosive blasting noise. To continue an eight year long exemption pending receipt of federal research, completion of

which has already been once delayed, would be in dereliction of the Board's responsibility under Section 25 of the Act to "prescribe for each [noise source] category the maximum permissible limits on such noise emissions.

Rule 101 Definitions

While these definitions are in the main self explanatory, it should be noted that reference has been made to the currently existing version of the ANSI document S1.4-1971--(R1976)--and the phrase "or subsequent revisions" has been deleted. Reference to a specific document, which is being filed with the Secretary of State for greater public availability, will insure that no question can be raised concerning the applicable "Specifications for Sound Level Meters".

Rule 208 Exceptions

Rule 209 Compliance Dates

These rules have not been modified from the proposed version. Rule 208(h) refers to Rule 210 as establishing sound limits as an exception to the Rule 206 general limits. The Rule 209(f) exemption to Rule 206 has been deleted in its entirety.

Rule 210 Impulsive Sound From Explosive Blasting

In recognition of the possibility of further delay in completion of the USBM "Human Response" research, and the resulting delay in initiation of the Board's "second step" human response rulemaking, the termination date the Board proposed to include in these "interim", OSMRE-based regulations has been deleted.

The Board chose not to exempt the coal mining industry from regulation under the Environmental Protection Act, as it believes that relief to the public from the effects of blasting noise should not be dependent upon the continuing authority of and federal support for the Department of Mines and Minerals to administer a federal noise control program. To eliminate regulatory inconsistency problems for the coal mining industry, the Board has amended the proposed rules to coincide with IDMM rules in all but one respect: IDMM additionally requires that emergency nighttime blasting be done only after its specific permission has been received.

The Board again notes that the Task Force intends to propose human response related noise limits once federal research into human response to blast noise is completed. If the jurisdiction of the Agency to monitor explosive blasts from coal mines is removed, its ability to provide input into the Board's regulatory process may be curtailed. In addition, while the Board and IDMM regulations are now virtually identical, in the future the regulatory response of the Board and OSMRE to the human response data or other factors may not be identical. This could result in

undesireable enforcement gaps. On the whole, coordination of monitoring efforts between the Agency and IDMM appears to the Board to be the most efficient and least disruptive approach to the dual jurisdiction issue.

Finally, in response to JCAR comments, the Board amended Rule 210 to provide that sound measurements may be taken from "any point of interference with the reasonable use of" receiving Class A or B land. The Board wishes to emphasize that this change in language is not indicative of a change in past practice in the noise area. Instead, it makes explicit the approach the Board has taken in past actions regarding noise regulations.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion was adopted on the 10th day of June, 1981 by a vote of 4-0.



Christan L. Moffett, Clerk
Illinois Pollution Control Board