

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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STATE OF ILLINOIS
POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC REGULATION)
APPLICABLE TO AMEREN ENERGY)
GENERATING COMPANY, ELGIN, ILLINOIS)
AMENDING 35 ILL. ADM. CODE 901)

R04-11
(Site Specific Rulemaking - Noise)

NOTICE

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the Pre-Filed Testimony of Howard Chinn, P.E. of Office of the Illinois Attorney General, a copy of which is hereby served upon you.


Respectfully submitted,

PEOPLE OF THE STATE OF ILLINOIS,
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Dated: January 7, 2004

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GENERATING COMPANY, ELGIN, ILLINOIS))	Rulemaking - Noise)
AMENDING 35 ILL. ADM. CODE 901)	

PRE-FILED TESTIMONY OF HOWARD CHINN, P.E.,
OFFICE OF THE ILLINOIS ATTORNEY GENERAL,
OPPOSING THE PROPOSED SITE SPECIFIC REGULATION APPLICABLE TO
AMEREN ENERGY GENERATING COMPANY, ELGIN, ILLINOIS
AMENDING 35 ILL. ADM. CODE 901

Howard Chinn, P.E., of the Office of the Illinois Attorney General submits the following comments in opposition to Ameren Energy Generating Company's request for a site-specific rulemaking for its peaker power plant facility in Elgin Illinois:

1. My name is Howard Chinn. I am a professional engineer and have been employed by the Office of the Illinois Attorney General for approximately 30 years. During that time, I have developed an extensive expertise with noise pollution, including the Illinois Pollution Control Board's ("Board") noise regulations and the proposed amendments to those regulations.

1. Ameren Energy Generating Company's ("Ameren") proposed site specific regulation ("proposal") for its Elgin, Illinois peaker plant facility ("facility") is premature and is a preemptive act to disenfranchise the future residents of the Village of Bartlett who will live near the facility. Those future residents may be adversely impacted by noise emissions

from the Ameren facility. Ameren's proposal may deprive those future residents of their rights in any future hearings on noise emissions from the facility.

3. Ameren's proposal is contrary to the legislative intent of Section 23 of the Illinois Environmental Protection Act¹ ("Act") which provides that:

The General Assembly finds that excessive noise endangers physical and emotional health and well being, interferes with legitimate business and recreational activities, increases construction costs, depresses property values, offends the senses, creates public nuisances, and in other respects reduces the quality of our environment.

It is the purpose of this Title to prevent noise which creates a public nuisance.

3. Ameren is also subject to and is required to comply with the prohibition against nuisance noise at Section 24 of the Act² which provides that:

No person shall emit beyond the boundaries of his property any noise that unreasonably interferes with the enjoyment of life or with any lawful business activity, so as to violate any regulation or standard adopted by the Board under this Act.

In addition, the Board's noise pollution regulations state that no person shall cause or allow the emission of sound beyond the boundaries of his property "so as to cause noise pollution in

¹ 415 ILCS 5/23 (2002)

² 415 ILCS 5/24 (2002)

Illinois . . ." Noise pollution is defined as "the emission of sound that unreasonably interferes with the enjoyment of life or with any lawful business or activity."³

4. Even if, for the sake of argument, the Board approves Ameren's proposal to change the numeric noise emission standards applicable to its facility, Ameren would still be required to comply with the nuisance noise prohibitions in the Act and the Board's regulations by prohibiting noise that unreasonably interferes with the enjoyment of life.

5. The numeric noise emission standards that Ameren seeks to change are standards that the Board has adopted pursuant to Section 25 of the Act⁴ which states in relevant part:

The Board shall, by regulations under this Section, categorize the types and sources of noise emissions that unreasonably interfere with the enjoyment of life, or with any lawful business, or activity, and shall prescribe for each such category the maximum permissible limits on such emissions.

6. The federal Noise Control Act of 1972⁵ regulates motors and engines. Ameren's petition indicated that its facility consists of four simple cycle combustion turbines. This equipment is identified in the Noise Control Act as a major source of noise; thus federal noise emission standards are

³ 35 Ill Adm. Code 900.102; 35 Ill. Adm. Code 900.101

⁴ 415 ILCS 5/25 (2002)

⁵ Amended by P.L. 107-377 on December 31, 2002. **Check**

feasible for such equipment and may be developed in the future.

7. According to Ameren's proposal, there are already residences in the area adjacent to Ameren's facility that has recently been reclassified as Class A land use.⁶ Therefore, Ameren should have no expectation that any vacant undeveloped land in that area would remain non-residential forever unless Ameren acquired the land or parts thereof for a buffer zone. According to testimony provided by Mr. Greg Zak at the Board hearings on peaker plants, maintaining a buffer zone is one of four strategies to control noise from peaker plants⁷.

8. In its proposal, Ameren claims that it will continue to operate the facility as designed to provide the maximum noise control that is economically reasonable and technically feasible.⁸ However, Ameren has not provided any credible engineering design data or cost estimates to substantiate the validity of this claim.

9. Ameren also claims that the exhaust silencing system installed when the facility was built was state of the art and

⁶ Ameren proposal, page 1-2; based on information provided by Ameren in the petition, the Village of Bartlett re-zoned the Realen property as residential in June 2003. Therefore, the property has been Class A for purposes of the Board's noise regulations since June 2003.

⁷ See In re: Natural Gas-Fired, Peak-Load Electrical Power Generating Facilities (Peaker Plants), R01-10, Tr. 1 at 133-134, IEPA Group Exh. 1, Zak at 4.

⁸ Ameren proposal, page 4.

that it affords maximum noise control.⁹ This assertion is unsupported. Ameren did not submit copies of any product manufacturer's labeling to support its claim.

10. During the Board peaker plant hearings, Greg Zak testified that:

First, properly designed and installed combustion air intake silencers reduce intake noise by approximately 99.999 to 99.99999% in the average peaker plant. Second, a hardened acoustical enclosure completely containing the gas turbine similarly controls noise radiated from the turbine's outer shell. Third, properly designed and installed combustion gas exhaust silencers reduce exhaust noise by approximately 99.9999 to 99.999999%.¹⁰

11. Ameren has not presented any evidence in their petition to demonstrate that the noise control measures implemented at their peaker plant facility were able to achieve the reductions of 99%+. Ameren could not even quantify the reductions in noise emissions.

12. Ameren also discussed several conceptual technical alternatives under the heading "Technical Infeasibility and Economic Unreasonableness of Further Reducing Low Frequency Noise at the Turbine's Exhaust".¹¹ The cost estimates provided therein

⁹Ameren proposal, page 9, final paragraph.

¹⁰ See docket R01-10, Tr. 1 at 132-134, IEPA Group Exh. 1, Zak at 4. **Check cite**

¹¹ Ameren proposal, page 10.

are without any verifiable back-up data to confirm the validity or authenticity of the numbers. Ameren provided no engineering design data or technical specifications of any kind for any of the technical alternatives discussed, opinions expressed, or conclusions reached in that section of its proposal. The discussions on the Experimental Active Noise Control are unspecific and do not seem to apply to Ameren's facility.¹²

13. Ameren should immediately proceed with the detailed noise study that they mention in the proposal.¹³ This noise study is a prerequisite to an engineering feasibility evaluation and economic analysis of alternative control technologies.

14. Ameren's proposal indicated that many of the area's ambient noise sources contribute mid and high-frequency noise, such as airplane flyovers, trains, car and truck traffic. Ameren claimed that people usually react by physically "closing out" the noise sources.¹⁴ However, Ameren did not provide any citations for this opinion. There is a discernable difference between the noise from Ameren's facility, which is continuous in character, as opposed to the transient noise emitted by airplanes, trains, and automobiles.

15. Ameren also asserts that noise from the facility has

¹² Id.

¹³ Ameren proposal, page 11, paragraph 2(a).

¹⁴ Ameren proposal, page 11, paragraph 2(b).

little or no impact on residences because the facility generally operates either during hot or cold weather. During hot and cold weather, Ameren claims that most people close their windows and doors in order to operate air conditioning or heating units¹⁵. Again, Ameren provides no facts, references, or citations in support of its assumption.

16. Ameren's \$1.2 million estimate to provide an enclosure for the facility to control mid-frequency noise is unsubstantiated.¹⁶ Ameren provided no cost breakdown or an engineering basis for the costs associated with such an enclosure. Ameren's other cost estimates for controlling mid and high frequency noise are also unsubstantiated.¹⁷

17. On December 3, 2003, Ameren filed several documents supporting its proposal with the with the Board including a copy of the Acoustical Evaluation and Ambient Sound Survey (dated November 30, 2000) ("Survey") and a copy of Analysis and Results of Acoustical Measurements Taken Near the Ameren Elgin, Illinois Power Facility (dated June 20, 2003) ("Measurements").

18. The Survey is a pre-construction report which indicates that:

... significant but achievable sound

¹⁵ Id.

¹⁶ Ameren proposal, page 11-12.

¹⁷ Id.

treatments would be necessary to achieve the acoustical requirements of the facility. Illinois noise regulations were found to be achievable with four unit operation."¹⁸

The Survey conclusion indicated that:

It is unlikely that simple noise abatement "fixes" such as barrier walls would completely solve the problem. It is probable that a building would be required over the gas turbines, generators, and inlet ducting to approach the Illinois Daytime Noise Regulations and mitigate the mid frequency issues.¹⁹

Based on my past experience with another electric generating facility (even though of a different design), I believe that Ameren should undertake an engineering feasibility study, including a cost estimate, to fully evaluate the concept of a building around the facility that would mitigate noise emissions.

19. Ameren contends that other peaker power plants should not be compared to their facility unless the other plants are equipped with identical manufacturer's equipment.²⁰ This is absurd and technically illogical. Ameren presented no information on their equipment selection process to indicate that they considered and/or evaluated other peaker plants on the market that had a lower noise emission rating.

20. During the hearings for docket R01-10 in December 2000,

¹⁸ Survey, page 4.

¹⁹ Survey, page 18.

²⁰ Ameren proposal, page 15.

Illinois EPA indicated that as of November 6, 2000, there were 67 air permits for existing and proposed power plants using simple or combined cycle turbines in Illinois. At that point, none of the owners of those facilities had submitted a petition for relief from the Illinois noise regulations. To date, it appears that no other peaker power plants have submitted such petitions. Ameren has presented no convincing or compelling information to demonstrate that there are extenuating circumstances that would warrant a site specific regulation for its Elgin facility.

21. The County of Du Page retained Versar, an environmental consultant, to review environmental issues related to peaker plants. During the peaker plant hearings before the Board, Versar indicated that peaker plant noise may be a concern. Versar provided information at the hearing on six proposed peaker plants, five in Illinois and one in Maryland, from four different developers. The five proposed peaker plants in Illinois were expected to meet Illinois' noise regulations.

22. Ameren's contention that peaker power plants are not regulated on a federal level is inaccurate.²¹ The federal Noise Control Act of 1972, as amended, references the type of equipment employed in a peaker power plant.

23. Ameren's contention that Illinois is probably the most active state in the union in terms of noise regulation is also

²¹ Ameren proposal, page 16.

inaccurate.²² The Illinois Environmental Protection Agency no longer has a noise control program.

24. Ameren also indicated that, like other Midwest states, noise from peaker power plants is not specifically regulated in Illinois.²³ This is misleading and a contradiction of Ameren's previous position that it is regulated by the noise provisions in the Act and the Board's regulations.

25. Ameren stated that they conducted two field sound measurement projects to correctly assess the potential environmental impact of the sound pressure level on the Realen property. Ameren indicated that the weather conditions were nearly perfect for measuring sound; there were moderate temperatures and humidity, and no wind.²⁴ Atmospheric conditions significantly influence sound propagation, especially wind direction and speed. A discernible difference in sound level is noted when measurements are taken downwind and then taken upwind from the same noise source. Noise may be amplified by low cloud cover. A complete discussion of this subject is beyond the scope of my comments. Nevertheless, I do not believe that the two measurement surveys in the Ameren proposal are representative of sound pressure levels under varying atmospheric conditions.

²² Id.

²³ Id.

²⁴ Ameren proposal, pages 17-18.

26. The two measurements indicated that the octave bands exceeding the Board's noise emission standards are 1 kHz and 2 kHz. There is no reasonable or rational basis to justify a site specific rulemaking for the other octave bands. The extrapolated values should not be used in lieu of actual measurement data for purpose of assessing the potential exceedence of noise emission limits.²⁵

27. Ameren correctly indicated, and I concur, that the two sets of sound pressure level data cannot be considered a complete statistical representation of sound from the facility. However, Ameren is incorrect in their claim that conducting more actual measurements while the facility fully operational is not feasible.²⁶ The variables are not, as Ameren claims, "far too numerous" to run a sufficient number of tests to create an adequate data base for decision making purposes.²⁷ I recommended that Ameren take at least three additional sets of noise measurements following the upcoming adoption of the amendments to the Board noise regulations.²⁸ Ameren should take those measurements when all four units at the facility are fully

²⁵ See Ameren proposal, page 23.

²⁶ Id.

²⁷ Id.

²⁸ See Board docket R03-9, In re: Proposed New and Updated Rules for Measurement and Numerical Sound Emissions Standards Amendments to 35 Ill. Adm. Code 901 and 910.

operational and when those units are in a start-up mode. Each of the sound measurements be taken under similar atmospheric conditions but at different receptor locations. The measurements should be taken when the ambient noise level is at its lowest. Pursuant to the Board's noise regulations, the atmospheric conditions must be fully documented and include both cloud cover and precipitation. The measurements should be compiled in a report and should include a scaled map identifying all physical features and topography. The "Detailed Noise Study" that Ameren described in the proposal should be conducted at the same time if practicable.²⁹

28. During the Board hearings held pursuant to docket R01-10, Mr. Erjavec of Indeck indicated that Indeck's peaker plants were designed to meet the Board's nighttime numeric noise standards at all times because those plants may be called upon to operate at any time and because sound attenuation cannot be increased at night.³⁰ He also added that Indeck's peaker plants are meeting Illinois noise standards via buffer zones or designed noise silencing measures.³¹

29. Indeck's consultant indicated in the public hearing for docket R01-10 that:

²⁹ Ameren proposal, page 11, paragraph 2(a).

³⁰ Docket R01-10, Tr.1 at 240-241.

³¹ Docket R01-10, Tr.1 at 242, Indeck Exh. 1, 2.

While it is true that low frequency noise is more difficult to mitigate than high frequency noise, that doesn't mean that it can't be controlled at all. For example, a reasonably substantial building envelope can contain much of the equipment noise inside the building, and barriers can provide a noise reduction of at least five (dB) at any frequency, provided they block the line of sight between the noise source and receiver.³²

Thus, Ameren should be able to contain its noise emissions at all levels with a building that blocks the line of sight between the facility and the proposed residences that will be built nearby.

30. For all of the reasons cited above, in recognition of the record developed by the Board in docket R01-10, and in the interest of fulfilling the purpose of Title VI of the Act to prevent noise which creates a public nuisance, the Office of the Attorney General respectfully requests that Ameren's proposal be denied.

³² Docket R01-10, Indeck Exh.2, ERM Report at 38.

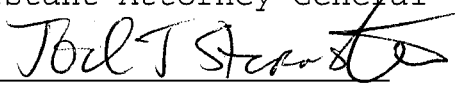
Respectfully submitted,

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CERTIFICATE OF SERVICE

I, JOEL J. STERNSTEIN, an Assistant Attorney General, certify that on the 7th day of January 2004, I caused to be served by First Class Mail the foregoing to the parties named on the attached service list, by depositing same in postage prepaid envelopes with the United States Postal Service located at 100 West Randolph Street, Chicago, Illinois 60601.



JOEL J. STERNSTEIN