**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

| | | |
|---|---|---|
| **IN THE MATTER OF:** | **)** | |
| | **)** | |
| PROPOSED NEW AND UPDATED | ) | |
| RULES FOR MEASUREMENT AND | ) | R 03-09 |
| NUMERICAL SOUND EMISSIONS | ) | (Rulemaking – Noise) |
| STANDARDS | ) | |
| AMENDMENTS TO 35 ILL. ADM. | ) | |
| CODE 901 AND 910 | ) | |

**NOTICE OF FILING**

TO: Ms. Dorothy M. Gunn
Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601
**(VIA ELECTRONIC FILING)**

Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
**(VIA FIRST CLASS MAIL)**

(PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that on October 3, 2005, I filed with the Office of the Clerk of the Illinois Pollution Control Board by electronic filing the FURTHER COMMENTS BY PAUL SCHOMER on behalf of the Village of Bridgeview, a copy of which is hereby served upon you.

Dated: October 3, 2005

Respectfully submitted,

By: /s/ Patricia F. Sharkey
One of its Attorneys

Patricia F. Sharkey
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**CERTIFICATE OF SERVICE**

I, Patricia F. Sharkey, an attorney, hereby certify that I have served the attached **Further Comments by Dr. Paul Schomer, Ph.D., P.E.**, upon:

Dorothy M. Gunn
Clerk of the Board
Illinois Pollution Control Board
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as indicated above, by electronic mail or by depositing said document in the United States Mail, postage prepaid, in Chicago, Illinois on October 3, 2005.

/s/ Patricia F. Sharkey
Patricia F. Sharkey

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October 3, 2005

Further comments by Paul Schomer

Due to illness, I was unable to attend the recent hearing on this matter in Springfield, but the following is the gist of what my testimony would have been.

I was asked by the City of Bridgeview to perform an analysis of the Board's proposed rule changes and, frankly, had given little thought to the technical issues involved prior to this present undertaking. I have used scientific curiosity and engineering skills to delve into these issues in a rigorous fashion. I find that there are several incontrovertible points:

My first point deals with qualifications. There is one way to correctly perform measurements and a multitude of ways to mess them up. Good measurements are not an accident. They must follow ANSI approved procedures using ANSI approved methods and instrumentation. The technician or engineer must understand the physics and mathematics of sound. They must be trained and experienced, and they must be properly supervised. There is a means to determine whether an engineer has the training and experience to perform or supervise accurate acoustical measurements: Board Certification by the Institute of Noise Control Engineering. This is the closest vehicle there is to a license in Acoustical Engineering. A wastewater plant analysis requires a licensed civil engineer, a bridge analysis requires a licensed structural engineer, an HVAC analysis requires a licensed mechanical engineer, etc. Acoustical engineering has similar complexities. Minimally, a Board Certified Noise Control Engineer should be required to perform or supervise measurements. Who would accept an analysis that a bridge was safe by an untrained layman? No court would allow purported factual and objective scientific data into a legal record without assuring itself of the credentials of the person who obtained the data. Acoustical engineering is one more engineering discipline. It requires the same rigor and respect -- no more, but certainly no less.

My second point deals with instrumentation. Measurements made with a "Radio Shack" type of device are worthless. It is only the naïve layman who would choose such an instrument. These instruments, by their specifications and features, are clearly best used for indoor measurements

of sound levels that may cause hearing damage. Indoors there is no wind and the levels of concern are 80 dB and above. But what about outdoor environmental noise measurements? The Radio Shack meter has an electrical noise floor of 50 dB. This noise floor renders all readings below about 55 dB as worthless. Lack of a windscreen further limits the "acceptable range" to still higher levels. Add to this, the lack of on-site calibration verification and the result is a measurement with virtually zero probability of acceptable accuracy. In most cases there is NO accuracy at all; the measurement result is simply not correlated with the sound in question.

My third point deals with maintaining the efficacy of the Board's rules. Many valid nuisance noise instances may not be detected by poor instruments. "Radio Shack" type instruments do not measure sound in individual octave bands. But there may be excess noise in low-frequency bands such as 31 or 63 Hz that barely measure on the A-scale. This excess noise will be missed because of the A-weighting. So inaccurate measurements, typically made by the naïve using a "Radio Shack" type of meter, can result in either overstating or understating true noise levels by many decibels and mislead the Board as to the noise source. Accepting a report of 50 dBA (which is the Radio Shack instrument floor rather than an actual noise measurement) does nothing to address the Board's procedures or validate its decisions. It also does nothing to diagnose the true problem, which is the only way to get to a valid engineering solution. The octave-band nature of the Board's rules is a positive feature not to be squandered by substituting A-weighted measurements of questionable validity. Octave-band noise levels are measurable and distinguishing octave band noise allows tailored and effective engineering solutions to nuisance problems. The nuisance provision works best for all parties when objective, reproducible and accurate information supports or rebuts the nuisance claim. Inaccurate noise measurements only mislead and make finding the true facts harder.

I hope you find these thoughts useful. My former written comments for the record provide more background on the above. I regret having missed the opportunity to address the Board directly at the September 1, 2005 hearing. I will be pleased to respond with further written comments to any questions that may arise within the Board based on these or my earlier comments.

Very sincerely,
Paul Schomer, Ph.D., P.E.,

Member, Board Certified, Institute of Noise Control Engineering