

BEFORE THE  
ILLINOIS POLLUTION CONTROL BOARD

RECEIVED  
CLERK'S OFFICE

MAY 27 2005

STATE OF ILLINOIS  
Pollution Control Board

IN THE MATTER OF: )  
)  
PROPOSED NEW AND UPDATED RULES )  
FOR MEASUREMENT AND NUMERICAL )  
SOUND EMISSIONS STANDARDS )  
AMENDMENTS TO 35 ILL. ADM. CODE )  
901 AND 910 )

R 03-09  
(Rulemaking - Noise)

PC#16

Comments of Dr. Paul Schomer, Ph.D., P.E.  
Schomer and Associates, Inc.

**I. Introduction**

These comments focus on Illinois Pollution Control Board's (IPCB) proposal in this proceeding to amend the noise measurement requirements. They address five specific areas:

1. Common errors made by those inexperienced in the science of noise measurement
2. The implications of these errors for valid noise measurement and Board decision-making.
3. How A-weighted measurements defeat many of the benefits of the IPCB rules, and how they work to the disadvantage of those impacted by noise.
4. The importance of specifying procedures for noise measurement and the limited value of measurement equipment manufacturer instructions.
5. The importance of ensuring that noise measurement is performed by qualified professionals.

**II. Common errors made by those inexperienced in the science of noise measurement**

**A. Errors in measuring and/or accounting for the background.**

The lay person does not understand or necessarily properly hear the background. In one case in Illinois, the complainant worked in an automobile body repair shop and had perhaps lost some of his high-frequency hearing. The complaint centered on air conditioner noise. Complainant alleged a nuisance violation of the IPCB rules and corroborated his complaint with measurements made using a Radio Shack sound level meter (SLM). He measured an A-

weighted level that registered in excess of 44 dB, and used this measurement to allege a violation of the IPCB nighttime rules for noise emitted from a Class B to a Class A land use. I was retained by the defendant to make measurements in accordance with the IPCB rules. The octave band measurement showed that:

1. The air conditioner noise was within the IPCB limits, and
2. The "offending" noise was insect noise at night in the 2 and 4 kHz octave band.

It is possible that the complainant had a hearing loss and could not hear the insect noise well enough and/or that he was so focussed on the air conditioner noise that he ignored all else. Absent the defendant hiring a professional and taking measurements according to procedures designed to distinguish background noise, the decision-maker in that case would have been misled by the complainant's purported measurements.

### B. Errors in measurement caused by wind-induce noise

The lay person does not understand the role that wind-induced noise makes on SLM measurements. In an out-of-state lawsuit, plaintiffs made measurements using a Radio Shack SLM and alleged that impulse noise levels, maximum *fast*, frequently exceeded 80 dB(A). Figure 1 shows the A-weighted maximum *fast* level versus wind gust speed for an SLM both with and without a windscreen. Winds were 5 to 10 mph on the day that plaintiffs made their measurements. The Radio Shack meters do not come with a windscreen, have no provision for adding a windscreen, and do not mention a windscreen in the instructions. As Figure 1 shows, the alleged noise measurements were easily the result of wind gusts.

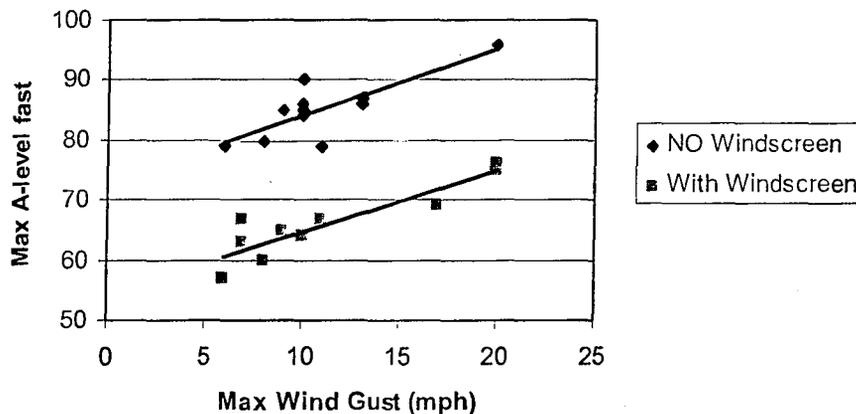


Figure 1. Wind noise versus wind speed for the conditions indicated.

### **C. Errors caused by microphone placement**

The lay person does not understand the role that reflecting surfaces have on noise measurements. In an out-of-state lawsuit, plaintiffs made measurements using a Radio Shack SLM and alleged excessive noise levels. For one measurement, the meter was set on the front porch, and in another case the meter was set on a patio table. The Radio Shack instructions did not adequately address the significance of measuring in these different situations, thus the lay person had no knowledge that on a porch, especially in the lower frequency bands, the reflections from walls and floor will increase the measured sound level by 0 to 18 dB.

### **III. The implications of these errors for valid noise measurement and Board decision-making.**

How is the IPCB to know that measurements alleged to originate from an air conditioner actually have their source elsewhere in the ambient environment? How is the Board alerted to the presence of other ambient noise sources? If alerted to the issue, how is the Board to separate wind-induced noise from real noise--after the fact? Wind in Illinois is such that it is virtually impossible to make noise measurements without a windscreen. How is the Board to evaluate microphone placement--after the fact? What is the "correction" to apply for a poor choice of microphone placement? Is it 3 dB, 6 dB, 12 dB, or even 18 dB? What effect does the electronic noise floor of the Radio Shack SLM have on the efficacy of the measurements? The noise floor is specified as 50 dB, so it is unlikely that it is low enough to measure the nighttime level of 44 dBA.

Given these manifold problems (the above are just a few examples), it is my opinion that purported evidence of noise emissions measured by a lay-person using a Radio Shack or any other handheld A-weighted measuring device is inherently unreliable and may not even be "in the ball park" in terms of providing the Board with a sense of noise levels in a nuisance case. The presumption that the Board review process can elicit any problems in such measurements is a precarious basis for rejecting the adoption of explicit noise measurement standards for nuisance noise cases.

### **IV. How A-weighted measurements defeat many of the benefits of the IPCB rules and actually work to the disadvantage of those impacted by noise.**

Allowing a lay person to make, hand-held, A-weighted measurements does a disservice to the rules and to the noise receiver. There is a trade-off between complexity of rules and efficacy of the regulations. The Illinois rules are more complex than some other state rules, but, as a result, are more useful and protective. Many jurisdictions use a simple A-weighted measure for their limit. This is less protective because it basically ignores the low and high frequencies relative to the middle frequencies, and because correction for the ambient can lead to substantial errors in results. Table 1 list the Illinois nighttime C to A limits, the A-weighting for each respective octave band, and the resulting A-weighted limit by octave band. For this situation, 51 dB(A) is the "screening" limit, but it is only really applicable to a broadband source that has most of its energies in the middle-frequency bands. If the actual source exists only in one octave band, then the fourth row in Table 1 gives the amount by which the A-weighted screening tool fails to

assess the true IPCB limit. Table 2 shows that essentially the same result ensues for the nighttime B to A limits. In both cases, simple, A-weighted screening fails to detect the spectrum of true noise, and thus, in some situations, true noise problems, by the amounts shown in line 4 of the tables, the "limit difference" line.

Band	31 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1kHz	2 kHz	4 kHz	8 kHz
Limit	69	67	62	54	47	41	36	32	32
A-weighting	-40	-26	-16	-9	-3	0	1	1	-1
A-weighted limit	29	41	46	45	44	41	37	33	31
Limit difference	22	10	5	6	7	10	14	18	20

Table 1. Nighttime C to A flat- and A-weighted limits. The fourth row contains the difference between the 51 dB(A) "screening" value and the corresponding A-weighted octave-band limit values.

Band	31 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1kHz	2 kHz	4 kHz	8 kHz
Limit	63	61	55	47	40	35	30	25	25
A-weighting	-40	-26	-16	-9	-3	0	1	1	-1
A-weighted limit	23	35	39	38	37	35	31	26	24
Limit difference	21	10	6	6	8	9	13	18	21

Table 2. Nighttime B to A flat- and A-weighted limits. The fourth row contains the difference between the 44 dB(A) "screening" value and the corresponding A-weighted octave-band limit values.

In one case outside Illinois, the measured factory noise and ambient noise both measured about the same A-weighted level. So "correcting for the ambient" left no significant factory noise. However, octave-band measurements showed that the ambient bird noise was at 1 to 2 kHz while the factory fan noise was at 125 to 500 Hz. Under the Illinois rules, the factory noise was excessive and easily separable from the ambient. But a simple "A-weighted" measurement would totally fail to reveal this.

Because measurements made with simple, hand-held instruments providing only A-weighted measurements fail to address the spectrum of octaves covered under the Illinois noise standards, they create a misleading picture of noise emissions and the contribution of individual noise sources. To the extent that the Board allows such evidence into the record without requiring a party to demonstrate its accuracy under the same standards applied to prove numeric violations, the Board's entire decision-making process in a nuisance case may be tainted by misleading information.

#### **V. The importance of specifying procedures for noise measurement and the limited value of measurement equipment manufacturer instructions**

Standards exist so that within a reasonable degree of scientific certainty, two people can make the same measurement on the same source at approximately the same location and achieve the same result within a stated tolerance. The measurement is then replicable and verifiable. Use of

standards is fundamental to noise measurement. If one party does not use standard procedures and standard equipment, then there is no possibility to scientifically state a tolerance to the measurement. In the area of noise, consensus standards are readily available for instrumentation (e.g., ANSI S1.4), for general measurement procedures (e.g., ANSI S1.13), and for short-term, background-corrected measurements with an observer present (e.g., ANSI S1.9 Part 3). Unless these Standards are followed, the IPCB has no valid scientific method by which to assess the accuracy of data submitted to it.

Manufacturer's instructions are no substitute for clearly stated regulatory standards, such as those currently contained in the Illinois EPA's regulations at 35 Ill. Adm. Code 951 and now proposed to be incorporated in Board regulations but *not* applied in nuisance cases. As discussed above, the "instructions" accompanying a Radio Shack SLM do not address many key factors affecting noise measurement. The meter does not meet the ANSI (or IEC) requirements, and, as noted above, does not even include a windscreen. What good is it to follow such "instructions." While it is certainly good practice to follow the manufacturer's guidance and instructions, to my knowledge, no manufacturer's instruction manual comes close to providing the procedures and information given in ANSI S1.13 and S12.9 Part3, and incorporated in the proposed Part 910 of the Board's rules.

In my opinion, the Board should use this rulemaking to make the standards for accurate measurement clear – for both numeric and nuisance cases. It is not enough to state that the Part 910 rules can be looked to as guidance – but the only requirement in a nuisance case is to follow “manufacturer's instructions.”

## **VI. Qualifications for noise measurement professionals**

The Board has viable options in terms of identifying qualified noise professionals. The most certain choice is to require that measurements be supervised by an individual who is a **Member, Board Certified**, of the Institute of Noise Control Engineering of the USA, Inc. (INCE/USA). INCE/USA is a non-profit technical society (IRS 509 (c) (6)) dedicated to the furtherance of noise control engineer. The INCE/USA business office is at Iowa State University. About 25 percent of the INCE/USA membership are Board Certified. Certification requires education, several years of experience, passing a rigorous 8-hour exam, and periodic professional activities for maintaining Certification. The following is from the INCE/USA By Laws (Annex A contains a bit more detailed information):

### **25. Board Certification in Noise Control Engineering**

1. An applicant for board certification shall be enrolled on the roster of the Institute as an INCE Member.
2. An applicant shall be of good moral character, shall furnish evidence of eight or more years of practical experience in the field of noise control engineering, and shall pass the eight-hour INCE Professional Examination to demonstrate competence in the field of noise control engineering.

3. A Certification Board, comprised of INCE Members, Board Certified, shall be appointed by the INCE Board of Directors to approve all applications for board certification.

4. The Board of Directors shall establish requirements for the maintenance of board certification by the Institute.

The requirements for becoming an INCE/USA Member, Board Certified insures that the individual understands the physics and mathematics of acoustics along with the engineering methods of noise measurement, control, and mitigation.

As a lessor option, the Board could require only that the person supervising the measurements be: (1) a member of INCE/USA (see attachment for INCE membership information) and/or (2) a full member of the Acoustical Society of America (ASA) (see Annex B). With such a requirement, it is likely that the individual has some working knowledge of the mathematics of acoustics and of acoustical measurements. Individuals who are members of INCE/USA will have their focus on noise issues while full members of the ASA span broad areas from musical acoustics, through speech and hearing, to underwater acoustics, but they also include members interested in noise.

A variant on this lessor option would be to require that measurements be conducted by a firm that is a member of the National Council of Acoustical Consultants (NCAC) (see attached NCAC Canon of Ethics).

From the above, it should be clear that the Board has viable options for:

1. Being certain of the qualifications of those who perform measurements (i.e., individual supervising measurements is an INCE/USA Member, Board Certified)
2. Screening those who perform measurements (i.e., individual supervising measurements is a member of INCE/USA or a full member of ASA and/or the firm is a member of NCAC).

## VII. CONCLUSIONS

From the above it is clear that:

1. Given the many ways that acoustical measurements can be done incorrectly, especially by a lay person using non-standard equipment, it is not possible to see how the Board can use any lay-person-measured A-weighted levels with a reasonable degree of scientific certainty.
2. The use of lay person measured data creates an added burden for the defendant of showing the lay person's errors in collecting and interpreting those data. This added burden should not exist since the likelihood of lay person measurements being accurate within a reasonable degree of scientific certainty is practically zero.
3. The IPCB should disallow the use of simple, hand-held, A-weighted measurements rather than encourage them because they do a disservice both to the efficacy of the rules and to the protection of those truly impacted by noise.
4. Standards are readily available for instrumentation (e.g., ANSI S1.4), for general measurement procedures (e.g., ANSI S1.13), and for short-term, background-corrected measurements with an observer present (e.g., ANSI S1.9 Part 3). The Board should require the use of these standards for all measurements. There really is no substitute for clear, uniform standards.
5. The Board should apply one of the following two options for objectively assessing the qualifications of those who perform acoustical measurements.
  - a. To be certain of the qualifications of those who perform measurements the Board should require that the individual supervising measurements be an INCE/USA Member, Board Certified.
  - b. To screen those who perform or supervise measurements the Boards should require that these individuals be a member of INCE/USA or a full member ASA and/or that the firm be a member of NCAC.

Date: May 26, 2005

Submitted by:

Paul Schomer

Dr. Paul Schomer, Ph.D., P.E.  
Schomer and Associates, Inc.

## ANNEX A

### INCE/USA BOARD CERTIFICATION IN NOISE CONTROL ENGINEERING

An INCE Member who desires Board Certification in Noise Control Engineering by the Board of Directors of INCE/USA shall:

- a) be enrolled on the roster of the Institute as an INCE Member;
- b) complete and sign an application for Board Certification in Noise Control Engineering, affix a recent head and shoulders photograph and mail to the INCE Membership Secretariat together with the fee stated on the application in USD by check or credit card to cover processing; the information required by subparagraph (d) below must be presented in complete and verifiable detail;
- c) request five personal references familiar with the applicant's professional qualifications and experience attest to the applicant's experience in the field of noise control engineering by completing INCE confidential reference forms; the forms shall be mailed directly to the INCE Membership Secretariat where they will be treated in strictest confidence. Of the five references, at least three of the references must be INCE members, including two members who are Board Certified. No more than two references from a single firm will be accepted, and individuals for whom the applicant has completed a confidential reference form (on an INCE Board Certification application) are not eligible to serve. It is the responsibility of the applicant to ensure that the individuals chosen as confidential references meet these requirements and that all five reference forms are returned to the INCE Business Office by the filing deadline;
- d) by means of an updated curriculum vitae and/or other appropriate documentation, furnish evidence of at least eight (8) years of experience in noise control engineering; experience may involve research, teaching, professional practice, or any combinations thereof, and may include the control of noise (and associated vibration) produced by commercial products, transportation vehicles or industrial plants; noise (and associated vibration) in buildings; the development of special instrumentation, measurement and analysis techniques, facilities and equipment; teaching, consulting, research and supervision of professional activities in noise control engineering. A baccalaureate degree from a college or university which has an ABET- or ACSA- accredited engineering or architecture program may be counted as equivalent to three (3) years of experience. Credit of an additional one year may be granted for satisfactory completion of a postgraduate acoustics-related degree from an accredited college or university graduate program;
- e) complete the INCE Professional Examination with a satisfactory grade as determined by the INCE Certification Board; the INCE Professional Examination evaluates the applicant's detailed knowledge and experience in noise control engineering applications, as well as the ability of the applicant to assume senior-level professional responsibilities in the practice of noise control engineering; the examination is of eight hours duration.

When the requirements of paragraphs b), c), d) and e) above are complete, the Certification Board chaired by the INCE Vice President-Board Certification shall review each application dossier and vote on acceptance or rejection of the application. Upon a majority vote of the INCE Certification Board for acceptance of an application, the Certification Board's recommendation will be forwarded to the INCE Board of Directors for final approval as a Board Certified Member.

The INCE President will advise the successful applicant in writing of his/her board certification. Members of the Institute who are Board Certified in Noise Control Engineering may use the abbreviation "INCE.Bd.Cert." following their names in professional correspondence, on calling cards and in curriculum vitae. No other abbreviations are authorized.

## **ANNEX B**

### **ACOUSTICAL SOCIETY OF AMERICA REQUIREMENTS FOR FULL MEMBERSHIP**

"Full Member: Any individual working in acoustics or related field, with an academic degree with a specialization in acoustics or related field, or with equivalent professional work experience in acoustics, may apply for full Membership."

Note: Membership application requires the signatures of two references who are full members or fellows of the Acoustical Society of America. The application requests information on professional experience and contributions to the field of acoustics.

# Membership Structure and Qualifications

## Institute of Noise Control Engineering

### I. GENERAL

This statement describes the membership structure of the Institute of Noise Control Engineering of the United States of America, Inc. (INCE/USA). The qualifications and requirements for membership are defined, as well as the procedures to be followed. Individuals having professional responsibilities or an interest in noise control engineering at any level may participate in the activities of the Institute. One of the goals of the Institute is to include within the organization a broad representation of individuals who have a professional interest in research, in teaching, and in engineering applications involving all aspects of noise control. The roster of the Institute includes INCE Members, INCE Distinguished International Members and INCE Associates. An individual interested in full INCE membership first enrolls as an INCE Associate, and then makes application to become an INCE Member. An INCE Member may also be Board Certified in Noise Control Engineering by the Board of Directors of the Institute. INCE Distinguished International Members are elected from among distinguished noise control engineers who reside outside the U.S.A. INCE Associates may remain in that status if they do not choose to apply for full INCE membership. The two basic requirements for an individual to advance from INCE Associate status to full membership in INCE/USA are that the applicant: (1) have earned a baccalaureate (or equivalent four-year academic degree), or higher degree, from a qualified program in engineering, physical science, or architecture offered by an accredited university or college, or have had at least one sole-author paper or two first-author papers published in or accepted for publication in the Noise Control Engineering Journal; and (2) have instructed, or have enrolled in and achieved a grade of "B" or better in, at least one full-semester (i.e. three credit or more) course of instruction offered by an accredited university or college devoted to the physical principles of acoustics, or have demonstrated at least five years experience in noise control engineering involving research, teaching, professional practice or any combination thereof. Both requirements must be satisfied.

A satisfactory grade on the INCE Fundamentals Examination, or a grade of "B" or better for completion of a course, approved by the Membership Committee, on the fundamentals of noise control engineering, may be considered sufficient for election to membership in lieu of one or both of the basic requirements above.

### II. INCE ASSOCIATE

To become an INCE Associate, the applicant shall:

- a) affirm an interest in noise control engineering;
- b) complete and sign an INCE Associate form, pay the annual INCE Associate fee as prescribed by the INCE bylaws, and send the form and payment to the Membership Secretariat, Institute of Noise Control Engineering, 212 Marston Hall, Iowa State University, Ames, IA 50011-2153. Telephone: (515)294-6142; FAX:(515)294-3528; e-mail: [ibo@inceusa.org](mailto:ibo@inceusa.org).

Upon receipt and review of the application by the INCE Membership Secretariat, the applicant will be notified in writing of his/her acceptance as an INCE Associate.

### III. INCE MEMBER

To become an INCE Member, the applicant shall:

- a) be enrolled on the roster of the Institute as an INCE Associate;
- b) be of good moral character;
- c) complete and sign an INCE Member application form and mail to the INCE Membership Secretariat together with any supporting material the applicant wishes to submit (e.g., current curriculum vitae, description of acoustics courses taken, etc.); the application form requires that an INCE Member sign the form as the applicant's endorser; the applicant is responsible for obtaining this signature.

Based on the information contained in 3) above, the INCE Board of Directors or a committee or board designated by the Board of Directors will approve all applications for membership based on the basic requirements stated in section I. Applicants who are considered deficient by the Membership Committee in satisfying the two basic requirements of section I shall be given the opportunity to take a two-hour INCE Fundamentals Examination. The purpose of the examination is to evaluate the applicant's knowledge of the fundamental principles of acoustics and noise control engineering. A satisfactory grade on the INCE Fundamentals Examination, or a grade of "B" or better for completion of a course, approved by the Membership Committee, on the fundamentals of noise control engineering, may be considered sufficient for election to membership in lieu of one or both of the basic requirements stated in Section I.

Upon election to full Member status by the INCE Board of Directors, the INCE Membership Secretariat will inform the applicant in writing of his/her election. Duly elected full Members of the Institute may use the letters "INCE" following their names in professional correspondence, on business cards, and in curriculum vitae. No other abbreviations are authorized.

### IV. BOARD CERTIFICATION IN NOISE CONTROL ENGINEERING

An INCE Member who desires Board Certification in Noise Control Engineering by the Board of Directors of INCE/USA shall:

- a) be enrolled on the roster of the Institute as an INCE Member;
- b) complete and sign an application for Board Certification in Noise Control Engineering, affix a recent head and shoulders photograph and mail to the INCE Membership Secretariat together with the fee stated on the application in USD by check or credit card to cover processing; the information required by subparagraph (d) below must be presented in complete and verifiable detail;
- c) request five personal references familiar with the applicant's professional qualifications and experience attest to the appli-

cant's experience in the field of noise control engineering by completing INCE confidential reference forms; the forms shall be mailed directly to the INCE Membership Secretariat where they will be treated in strictest confidence. Of the five references, at least three of the references must be INCE members, including two members who are Board Certified. No more than two references from a single firm will be accepted, and individuals for whom the applicant has completed a confidential reference form (on an INCE Board Certification application) are not eligible to serve. It is the responsibility of the applicant to ensure that the individuals chosen as confidential references meet these requirements and that all five reference forms are returned to the INCE Business Office by the filing deadline;

d) by means of an updated curriculum vitae and/or other appropriate documentation, furnish evidence of at least eight (8) years of experience in noise control engineering; experience may involve research, teaching, professional practice, or any combinations thereof, and may include the control of noise (and associated vibration) produced by commercial products, transportation vehicles or industrial plants; noise (and associated vibration) in buildings; the development of special instrumentation, measurement and analysis techniques, facilities and equipment; teaching, consulting, research and supervision of professional activities in noise control engineering. A baccalaureate degree from a college or university which has an ABET- or ACSA-accredited engineering or architecture program may be counted as equivalent to three (3) years of experience. Credit of an additional one year may be granted for satisfactory completion of a postgraduate acoustics-related degree from an accredited college or university graduate program;

e) complete the INCE Professional Examination with a satisfactory grade as determined by the INCE Certification Board; the INCE Professional Examination evaluates the applicant's detailed knowledge and experience in noise control engineering applications, as well as the ability of the applicant to assume senior-level professional responsibilities in the practice of noise control engineering; the examination is of eight hours duration.

When the requirements of paragraphs b), c), d) and e) above are complete, the Certification Board chaired by the INCE Vice President-Board Certification shall review each application dossier and vote on acceptance or rejection of the application. Upon a majority vote of the INCE Certification Board for acceptance of an application, the Certification Board's recommendation will be forwarded to the INCE Board of Directors for final approval as a Board Certified Member.

The INCE President will advise the successful applicant in writing of his/her board certification. Members of the Institute who are Board Certified in Noise Control Engineering may use the abbreviation "INCE.Bd.Cert." following their names in professional correspondence, on calling cards and in curriculum vitae. No other abbreviations are authorized.

#### **V. INCE DISTINGUISHED INTERNATIONAL MEMBER**

The status of INCE Distinguished International Member is conferred by the INCE Board of Directors upon eminent acousticians who reside outside the U.S.A. This distinguished, honorary status is conferred upon individuals who have personally

made extraordinarily significant contributions to the theory and/or practice of noise control engineering. Nominations are submitted by a committee of peers who are active in noise control engineering in the country of the proposed nominee. Applications not being accepted, the only path to INCE Distinguished International Member status is by peer group recognition and nomination. Nonetheless, full Membership in INCE/USA, as well as Board Certification in Noise Control Engineering, is available to all individuals who meet the requirements of Sections III and IV above, regardless of nationality or country of residence. INCE Distinguished Corresponding Members are entitled to use the abbreviation "INCE.Dist.Intn'l.mem." following their names in professional correspondence, on calling cards and in curriculum vitae.

#### **VI. ANNUAL FEE**

The 2004 annual fee for INCE Associates, Members and Distinguished International Members is US\$ 95. All receive an annual membership directory, *Noise/News International* (quarterly) and *Noise Control Engineering Journal* (bimonthly). Postal charges for delivery outside the U.S.A. are assessed in addition to the US\$ 95 fee. In all other countries, it is US\$25.00.

#### **VII. STUDENT ASSOCIATES**

Full-time students enrolled in engineering, physics or architecture at a college or university having at least one ABET- or ACSA-accredited program, may, upon completion of the application procedure of Section II above and submission of certification that they are enrolled at their academic institutions, become INCE Associates for an annual fee of \$20

#### **VIII. EXAMINATION FEES**

There is no fee for either the INCE Fundamentals Examination or the INCE Professional Examination when these examinations are taken as offered, which is at least once annually in conjunction with regularly-scheduled NOISE-CON conferences or INTER-NOISE congresses held in North America. Any requests for special offerings of INCE examinations require the approval of the INCE Vice President-Membership or the INCE Vice President-Board Certification, as appropriate, via the INCE Membership Secretariat. Such special offerings require that there be a reasonable number of candidates to take the examinations at the proposed time and location. In addition, candidates for specially scheduled INCE exams will be required to prepay a special examination fee to defray the expenses of preparing and administering the examinations.

#### **MEMBERSHIP SECRETARIAT**

Information on all matters relating to membership, including application forms for INCE Associates and INCE Members, and for Board Certification in Noise Control Engineering, may be obtained by contacting:

Membership Secretariat  
Institute of Noise Control Engineering  
212 Marston Hall  
Iowa State University  
Ames, IA 50011-2153, USA.

Telephone: (515) 294-6142; FAX: (515) 294-3528.  
E-mail: [ibo@inceusa.org](mailto:ibo@inceusa.org).

# NATIONAL COUNCIL OF ACOUSTICAL CONSULTANTS

## CANON OF ETHICS

### **PREAMBLE**

Acoustical consulting is an important and learned profession. The members of the profession recognize that their work has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by acoustical consultants require honesty, impartiality, fairness and equity and must be dedicated to the protection of the public health, safety and welfare in the practice of their profession. Acoustical consultants must perform under a standard of professional behavior which requires adherence to the highest principles of ethical conduct on behalf of the public, clients, employees and the profession.

### **1. Fundamental Canons**

Acoustical consultants, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act in professional matters for each client as faithful agents or trustees.
5. Avoid improper solicitation of professional assignments.

### **II. Rules of Practice**

1. Acoustical consultants shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.

a. Acoustical consultants shall at all times recognize that their primary obligation is to protect the safety, health, property and welfare of the public. If their professional judgment is overruled under circumstances where the safety, health, property or welfare of the public are endangered, they shall notify their client and such other authority as may be appropriate

b. Acoustical consultants shall approve only acoustical consulting work which, to the best of their knowledge and belief, is safe for public health, property and welfare and in conformity with accepted standards.

c. Acoustical consultants shall not reveal facts, data or information obtained in a professional capacity without the proper consent of the client except as authorized or required by law or these Guidelines.

d. Acoustical consultants shall not permit the use of their name or firm nor associate in business ventures with any person or firm which they have reason to believe is engaging in fraudulent or dishonest business or professional practices

e. Acoustical consultants having knowledge of any alleged violation of these Guidelines shall cooperate with the proper authorities in furnishing such information or assistance as may be required

2. Acoustical consultants shall perform services only in the areas of their competence

a. Acoustical consultants shall undertake assignments only when qualified by education or experience in the specific technical fields involved

b. Acoustical consultants shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence nor to any plan or document not prepared under their direction and control.

- c. Acoustical consultants may accept an assignment outside of their fields of competence to the extent that their services are restricted to those phases of the project in which they are qualified and to the extent that they are satisfied that all other phases of such project will be performed by registered or otherwise qualified associates, consultants or employees, in which case they may then sign the documents for the total project.
3. Acoustical consultants shall issue public statements only in an objective and truthful manner.
  - a. Acoustical consultants shall be objective and truthful in professional reports, statements or testimony. They shall include all relevant and pertinent information in such reports, statements or testimony.
  - b. Acoustical consultants may express publicly a professional opinion on technical subjects only when that opinion is founded upon adequate knowledge of the facts and competence in the subject matter.
  - c. Acoustical consultants shall issue no statements, criticisms, or arguments on technical matters which are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking and by revealing the existence of any interest they may have in the matters.
4. Acoustical consultants shall act in professional matters for each client as faithful agents or trustees.
  - a. Acoustical consultants shall disclose all known or potential conflicts of interest to their clients by promptly informing them of any business association, interest or other circumstances which could influence or appear to influence their judgment of the quality of their services.
  - b. Acoustical consultants shall not accept compensation, financial or otherwise, from more than one party for services on the same project or for services pertaining to the same project, unless the circumstances are fully disclosed to, and agreed to, by all interested parties.
  - c. Acoustical consultants in public services as members of a governmental body or department shall not participate in decisions with respect to professional services solicited or provided by them or their organizations in private acoustical consulting practices.
  - d. Acoustical consultants shall not solicit or accept a professional contract from a governmental body on which a principal or officer of their organization serves as a member.
  - e. Acoustical consultants shall not solicit or accept a professional contract from a governmental body on which a principal or officer of their organization serves as a member.
5. Acoustical consultants shall avoid improper solicitation of professional assignments.
  - a. Acoustical consultants shall not falsify or permit misrepresentation of their, or their associates, academic or professional qualifications. They shall not misrepresent or exaggerate their degree of responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of assignments shall not misrepresent pertinent facts concerning employees, associates, joint ventures or past accomplishments with the intent and purpose of enhancing their qualifications and their work.
  - b. Acoustical consultants shall not offer, give, solicit or receive, either directly or indirectly, any political contribution in an amount intended to influence the award of a contract by public authority, or which may be reasonably construed by the public of having the effect or intent to influence the award of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage or brokerage fee in order to secure work except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

**CERTIFICATE OF SERVICE**

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

Dorothy M. Gunn  
Clerk of the Board  
Illinois Pollution Control Board  
100 West Randolph Street  
Suite 11-500  
Chicago, Illinois 60601  
(Hand Delivery, Original + 9 copies)

Marie Tipsord  
Hearing Officer  
Illinois Pollution Control Board  
100 West Randolph Street  
Suite 11-500  
Chicago, Illinois 60601  
(Hand Delivery)

Howard O. Chinn  
Chief Engineer  
Office of the Attorney General  
188 West Randolph Street, 20<sup>th</sup> Floor  
Chicago, Illinois 60601  
(U.S. Mail)

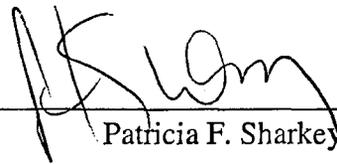
Kyle Rominger  
Division of Legal Counsel  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, Illinois 62794-9276  
(U.S. Mail)

Thomas G. Safley  
Hodge, Dwyer, Zeman  
3150 Roland Avenue  
P.O. Box 5776  
Springfield, IL 62705-5776  
(U.S. Mail)

Robert A. Messina  
General Counsel  
Illinois Environmental Regulatory Group  
3150 Roland Avenue  
Springfield, IL 62703  
(U.S. Mail)

Robert C. Wells  
Wells Environmental Systems  
2061 Gladstone  
Wheaton, IL 60187  
(U.S. Mail)

as indicated above, by hand delivery or by depositing said document in the United States Mail, postage prepaid, in Chicago, Illinois on May 27, 2005.



---

Patricia F. Sharkey

Patricia F. Sharkey  
Mayer, Brown, Rowe & Maw LLP  
190 South LaSalle Street  
Chicago, Illinois 60603-3441