

City of Moline  
**PLAN COMMISSION**

Wednesday, February 12, 2014  
4:00 p.m.  
Council Chambers

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**AGENDA**

1. PC 14-01: Public hearing for a request from the City of Moline to amend Section 35-5409, "NOISE", of the Zoning and Land Development Code, Chapter 35 of the Moline Code of Ordinances. *(Shawn Christ, Land Development Manager)*
2. Approval of Minutes – January 22, 2014
3. Consideration: PC 14-01
4. Review upcoming meetings
5. Other

*Any person with disabilities who wishes to attend the meeting who requires a special accommodation or any other person requiring a special accommodation in attending the meeting should notify Holly K. Jackson, Department of Planning & Development, 524-2030.*

# PLAN COMMISSION MINUTES

Wednesday, January 22, 2014

**Present** Dan McConaghy (Chairman), Cindy Wermuth (Vice Chairman) Butch Trevor, Mike Wendt, John Wetzel, Dennis Kelly

**Absent:** Jeff Nelson, Bill Fitzsimmons, Matt Puck, Pete McDermott, Mike Crotty

**Staff:** Shawn Christ, Holly Jackson

**Others:** Russell T. Walker, Yanet Garcia, Mark Marshall applicant for PC 13-14

Chairman McConaghy called the meeting to order at 4:00 pm in the Moline City Council Chamber.

1. **PC 13-14 Public hearing for a request from The Mills at Riverbend Commons, LLC (Three Corners Development) for a Special Use Permit for a Group Development in the B-2 Central Business Zoning District at 2900 River Drive.**

Mr. Christ swore in those persons present who intended to provide testimony. He acknowledged that the publication for the hearing notice PC 13-14 was published in the Dispatch on November 26. He requested that the secretary enter the attachments for said items into the record. Mr. Christ provided a status of summary of this project. He indicated some photos in the Commissioner packets were intended to show sample materials used on other projects. Mr. Christ explained this is a four story building on River Drive with first floor retail and upper three floors residential student housing for Western Illinois University. The building being talked about today is Phase 1A, as shown on the plan, which is closest to the Western building.

Landscaping meets requirements for a group development. The plans show a rear courtyard with a sand volleyball court and outdoor grill area. Parking is provided onsite and sidewalks along both River Drive and University Drive and access to both the front and rear as required. The staff review comments are included; there were a number of issues which have been worked through and changes made as requested. They propose precast concrete on first floor and EIFS and fiber cement siding on the upper floors. Staff has determined these materials are acceptable under the zoning code. Additionally, the zoning code requires the building exterior design to be unified and complement other buildings in the vicinity. Staff reviewed the proposal for River Bends Commons and feels the style design and materials are very similar.

Chairman McConaghy asked for Mr. Christ to go back to first slide and explain area in green versus the area not in green. Mr. Christ explained the green line shows what is mapped today but the City Council recently approved a subdivision created a five-acre lot to be sold to the developer to build their first phase. Mr. McConaghy clarified this action today only affects this parcel and this specific building.

**Staff Recommendation:** Mr. Christ relayed that staff recommended the Special Use application be approved as submitted, without conditions.

Russell T. Walker, Senior Designer for Holabird & Root addressed the Commission and spoke on behalf of Three Corners Development. He expressed their excitement and gratitude to the community for the opportunity. He believes this will be a handsome building. Commissioner Kelly asked the time frame for students to move in and Mr. Walker responded the students will be moving in fall of 2014. Mr. Walker explained they have been hired to design stage three of the University.

Mark Marshall of Three Corners Development briefly addressed the Commission and expressed his gratitude.

There being no further comment, the public hearing was closed.

**2. Approval of Minutes – November 13, 2013**

**Motion by Commissioner Kelly, seconded by Commissioner Wetzel, to approve the minutes for November 13, 2013. Motion carried unanimously.**

**3. Consideration**

**PC13-14**

**Motion by Commissioner Kelly, seconded by Commissioner Wetzel, to recommend approval to the City Council for Special Use Permit for a Group Development in the B-2 Central Business Zoning District at 2900 River Drive, Moline**

**4. Review upcoming meetings**

The next regularly scheduled meeting will be on February 12<sup>th</sup>.

**5. Other Discussion**

Commissioner Kelly asked about short term or long term plans to improve or reconstruct River Drive to accommodate the additional traffic. Mr. Forsythe replied Public Works is looking at a capital improvement plan.

Mr. Christ informed the Commissioners Duncan Associates has been hired for the Subdivision code update. A kickoff meeting with Kirk Bishop, principal is scheduled for the first week of February.

Mr. Christ stated the noise code is outdated. Parts of it date back to 1950 and is impossible to enforce because measuring equipment is no longer available. Mr. Christ is working with a sound engineer on a code amendment and hopes to have this scheduled for the next meeting.

There being no further business, the meeting adjourned at 4:48p.m.

Respectfully submitted,

Holly K. Jackson, Administrative Secretary



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Land  
Development  
524-2050

## MEMORANDUM

TO: Plan Commission  
FROM: Shawn M. Christ, AICP, Land Development Manager  
SUBJECT: PC 14-01: Zoning Text Amendments – noise standards  
DATE: February 7, 2014

Attached please find a redlined draft of a proposed amendment to the City's Zoning and Land Development Code (Chapter 35), Sec. 35-5409 "NOISE".

Section 35-2203(c) lists the approval criteria for zoning text and map amendments. You'll recall most of these criteria are specific to rezoning requests, however, the following may be evaluated for the proposed text amendments:

**Whether the existing text was in error at the time of adoption.** Staff believes the existing text contained numerous errors at the time of adoption.

Staff hired Jon Mooney, PE, an acoustical engineer at KJWW Consultants in Rock Island, to perform a technical review of Moline's noise standards and present findings and recommendations. A copy of Mr. Mooney's report is attached. Mr. Mooney found Moline's noise standards are based on 1950s technology and there are no instruments available today to measure and enforce the sound pressure levels stated within Moline's zoning code. Mr. Mooney recommended technical revisions which includes converting the existing sound levels to match the abilities of modern sound instruments.

**Whether there is a need in the community for the proposal.** Noise emissions are common sources of nuisance complaints. Staff feels it is important to have reasonable noise limit standards which are not only measurable but also enforceable.

**Whether the proposal is in conformance with and in furtherance of the implementation of the goals and policies of the Comprehensive Plan, other adopted plans, and the policies, intents, and requirements of the Zoning Code and other City regulations and guidelines.**

The Comprehensive Plan discusses potential noise conflicts between differing land uses and ways to minimize conflicts through land use planning. The amendments are also consistent with the stated purposes and intent of the Zoning and Land Development Code. This proposal conforms with and furthers Moline's adopted goals, policies, and codes.

**Recommendation.** Staff requests Plan Commission support of the proposed amendments. Your vote should be in the form of a recommendation to the City Council.

#### Attachments:

Existing noise standards  
Proposed amendment to noise standards  
Consultant technical review

Existing standards

MOLINE CODE OF ORDINANCES

such as the zoning administrator or a designee) at the lot line. Solar systems regulated by the State shall be entitled to the protection of its provisions.

**SEC. 35-5407. SEWAGE WASTE.**

Sewers and sewage discharge shall meet all applicable City and IEPA requirements.

**SEC. 35-5408. STORAGE OF COMBUSTIBLES.**

(a) All combustible material shall be stored in such a way as to include, where necessary, access drives to permit free access of firefighting equipment.

(b) The bulk storage of flammable liquids and chemicals, when stored in above-ground tanks, shall be no closer to the lot line or any principal building than the distance indicated below:

<u>Capacity Per Container (Gallons)</u>	<u>Minimum Separation Distance</u>
Less than 125	None
125 to 250	10 Feet
251 to 500	10 Feet
501 to 2,000	25 Feet
2,001 to 30,000	50 Feet
30,001 to 70,000	75 Feet
70,001 to 90,000	100 Feet

(c) The underground bulk storage of flammable liquids shall be located in accordance with the Moline Fire Code regarding tank storage underground, except the minimum distance between such underground tanks and any residential zone boundary shall be at least 10 feet.

**SEC. 35-5409. NOISE.**

(a) The requirements of this section shall apply in all zoning districts.

(b) The sound pressure level, to be measured as described in subsection (d), below, shall not exceed the following decibel levels in the designated octave bands within the designated zoning districts:

<u>Octave Band, Cycles Per Second</u>	<u>Sound Level, In Decibels</u>	
	<u>Agriculture, Business, Office and Industrial Districts</u>	<u>Conservation and Residential Districts</u>
0 to 75	73	58
76 to 150	69	54
151 to 300	65	50
301 to 600	61	46
601 to 1,200	55	40
1,201 to 2,400	48	33
2,400 to 4,800	41	26
Over 4,800	35	20

(c) Objectionable sounds of an intermittent nature which are not easily measured shall be controlled so as not to become a nuisance to adjacent uses.

(d) The sound levels shall be measured with a sound level meter and associated octave band filter as prescribed by the American Standards Association.

(Final Draft of proposed amendments for hearing February 12, 2014)

**SEC. 35-5409. NOISE.**

- (a) The emission of sound from any operation or activity shall not exceed the allowable octave band sound pressure levels specified in Table 35-5409.1 at any height on any offsite location.
- (b) Sound levels shall be measured at the property line near the noise source using an American National Standards Institute (ANSI) Type 2 or Type 1 sound level meter.
- (c) Objectionable sounds of an intermittent nature or sounds which are not easily measured shall be controlled so as to not become a nuisance to adjacent properties or uses, as determined by the Zoning Administrator.

**Table 5409.1**  
**Noise Performance Standards**

<u>Octave Band Center Frequency (Hertz, Hz)<sup>(2)</sup></u>	<u>Maximum Allowable Offsite Octave Band Sound Pressure Levels (dB re 20 uPa)<sup>(1)</sup></u>	
	<u>Agriculture, Office, Business, and Industrial Districts (decibels, dB)</u>	<u>Conservation and Residential Districts (decibels, dB)</u>
<u>31.25</u>	<u>71</u>	<u>56</u>
<u>62.5</u>	<u>73</u>	<u>58</u>
<u>125</u>	<u>69</u>	<u>54</u>
<u>250</u>	<u>67</u>	<u>52</u>
<u>500</u>	<u>61</u>	<u>46</u>
<u>1000</u>	<u>55</u>	<u>40</u>
<u>2000</u>	<u>48</u>	<u>33</u>
<u>4000</u>	<u>41</u>	<u>26</u>
<u>8000</u>	<u>35</u>	<u>20</u>

Footnotes:

- (1) Meter measurement settings:  
Unweighted Leq (equivalent continuous sound level)  
Fast integration time (125 ms)
- (2) ANSI Standard S1.4 or most recent specification for sound level meters.

The **FUTURE.**  
Built **SMARTER.**



December 16, 2013

Mr. Shawn M. Christ, AICP, CFM  
Land Development Manager, Zoning Administrator  
City of Moline Planning & Development  
619 16th Street  
Moline, Illinois 61265

Subject: Technical Review of Moline's Noise Code  
KJWW #13.0860.00

Dear Shawn,

I have completed a technical review of Moline's Noise Code. These are my findings and recommendations.

Following is Section 35-5409 of the City of Moline's zoning code:

**SEC. 35-5409. NOISE.**

*(a) The requirements of this section shall apply in all zoning districts.*

*(b) The sound pressure level, to be measured as described in subsection (d), below, shall not exceed the following decibel levels in the designated octave bands within the designated zoning districts:*

<i>Sound Level, In Decibels</i>	<i>Agriculture, Business, and Industrial Districts</i>	<i>Office Conservation and Residential Districts</i>
<i>Octave Band, Cycles Per Second</i>		
<i>0 to 75</i>	<i>73</i>	<i>58</i>
<i>76 to 150</i>	<i>69</i>	<i>54</i>
<i>151 to 300</i>	<i>65</i>	<i>50</i>
<i>301 to 600</i>	<i>61</i>	<i>46</i>
<i>601 to 1,200</i>	<i>55</i>	<i>40</i>
<i>1,201 to 2,400</i>	<i>48</i>	<i>33</i>
<i>2,400 to 4,800</i>	<i>41</i>	<i>26</i>
<i>Over 4,800</i>	<i>35</i>	<i>20</i>

*(c) Objectionable sounds of an intermittent nature which are not easily measured shall be controlled so as not to become a nuisance to adjacent uses.*

*(d) The sound levels shall be measured with a sound level meter and associated octave band filter as prescribed by the American Standards Association.*

## Technical Interpretation of the Code

This code appears to be from the 1950's or early 1960's. It references the American Standards Association which became the American National Standards Institute (ANSI) in 1969. The quality of instrument is not specified.

**KJWW recommends updating the code to reference the latest version of ANSI Standard S1.4 Specification for Sound Level Meters and specify a Type 1 or Type 2 grade instrument.**

The octave band frequencies listed in the code were used until about 1960 ( Crocker and Price, p143) and were officially replaced by a 1000 Hz based octave band filter system with the adoption of Standard S1.11 in 1966. The 0 to 75 cycle per second (Hertz, Hz) octave band would have been measured with a 20 to 75 Hz low pass filter and there would have been no capability for measurements below 20 Hz. The Over 4800 cycle per second octave band would have been measured with a 4800 to 10,000 Hz high pass filter and there would have been no capability allowing measurements above 10,000 Hz.

**KJWW recommends updating the noise code to the newer standard octave bands.**

Paragraph (b) calls for measurement of "*sound pressure level...in the designated octave bands*" which is interpreted to mean the un-weighted octave band sound pressure level. The use of the term "sound pressure level" instead of "sound level" is further indication that the measurements are to be un-weighted (i.e., "linear" or "LIN" selected instead of "A," "B," or "C" filtered).

**KJWW recommends updating the code to call for un-weighted octave band sound pressure level measurements.**

Paragraph (b) also uses the phrase "*shall not exceed.*" Sound meters in the 1950's did not have the capability to register maximum levels. The normal meter procedure was to watch the needle of the indicator dial for a few moments and to visually estimate the average position of the needle during the test. This type of measurement is best estimated by an L50 (i.e. level exceeded 50% of the time) setting on a modern meter.

**KJWW recommends updating the code to call for an L50 measurement.**

No integration time is noted in the code; therefore, the standard 125 ms or "fast" integration time would have been assumed (Beranek, p802).

**KJWW recommends updating the code to specify a 125 ms or fast integration time.**

There is no measurement position specifically mentioned in the code; therefore it would have been assumed the measurement was to be taken at the property line of the noise source.

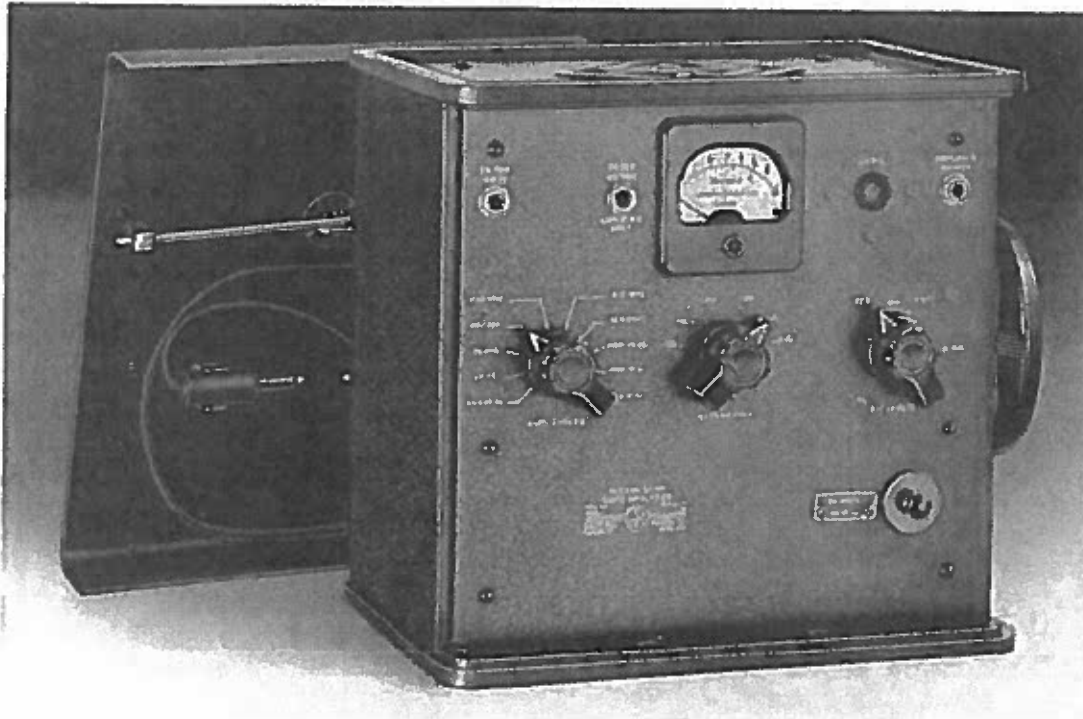
**KJWW recommends updating the noise code to specify measurements to be taken at the property line of the noise source.**



Therefore, it appears this code was intended to be enforced using measurements from a circa 1955, eight band, sound pressure level meter, with the "linear" filter and "fast" integration time selected. A typical instrument of that decade which could be used to enforce this noise code is the General Radio (GenRad or IET Labs), Type 1550-A, Octave Band Noise Analyzer (General Radio Company, 1951). There are no instruments built today which can be used to directly measure and enforce the octave band sound pressure levels within this code.

**KJWW recommends updating the noise code with the conversion of the octave band level values from the old octave band system to the newer octave band system.**

Figure 1. View of the Type 1550-A Octave-Band Noise Analyzer with cover removed to show panel.



### **Conversion of the Noise Code for use with Modern Test Equipment**

Modern octave band sound pressure level meters provide measurements using the new octave system whose bands are shifted higher in frequency from those in the old system. Because of this frequency shift, converting sound levels from the old system to the new system is dependent on the slope of noise versus frequency being measured. Allowing for noise having slopes of +/- 6 dB per octave, Moline's noise code translates to the following table. Noise sources exceeding these translated octave band sound pressure limits would have exceeded the old octave band limits.

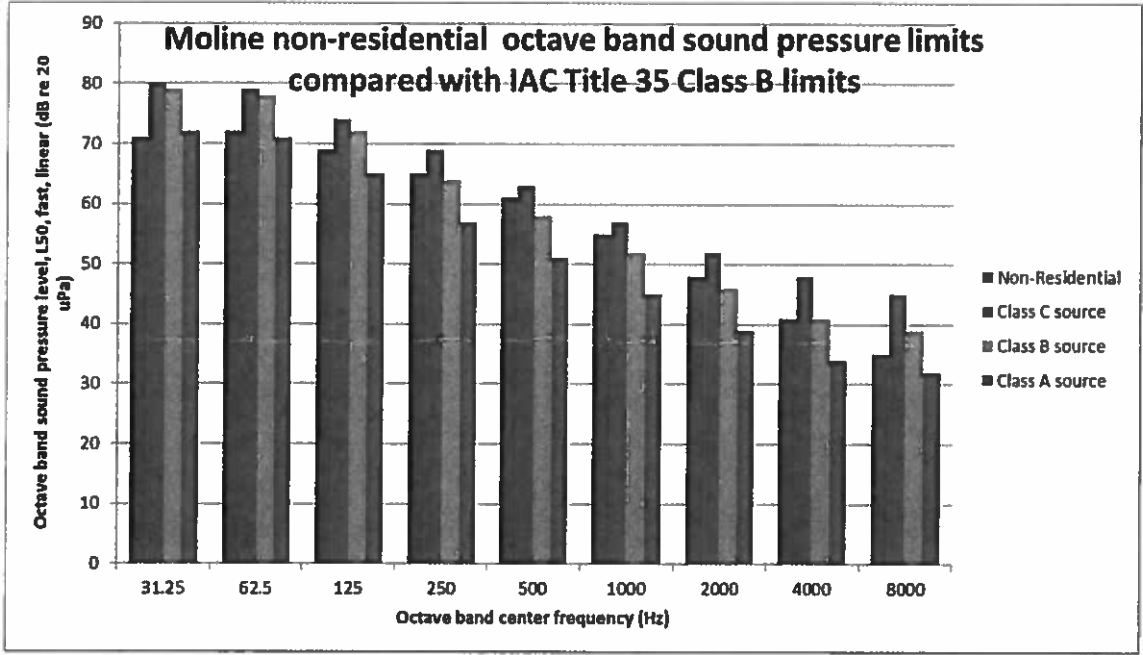
**KJWW recommends updating the noise code with the following table:**

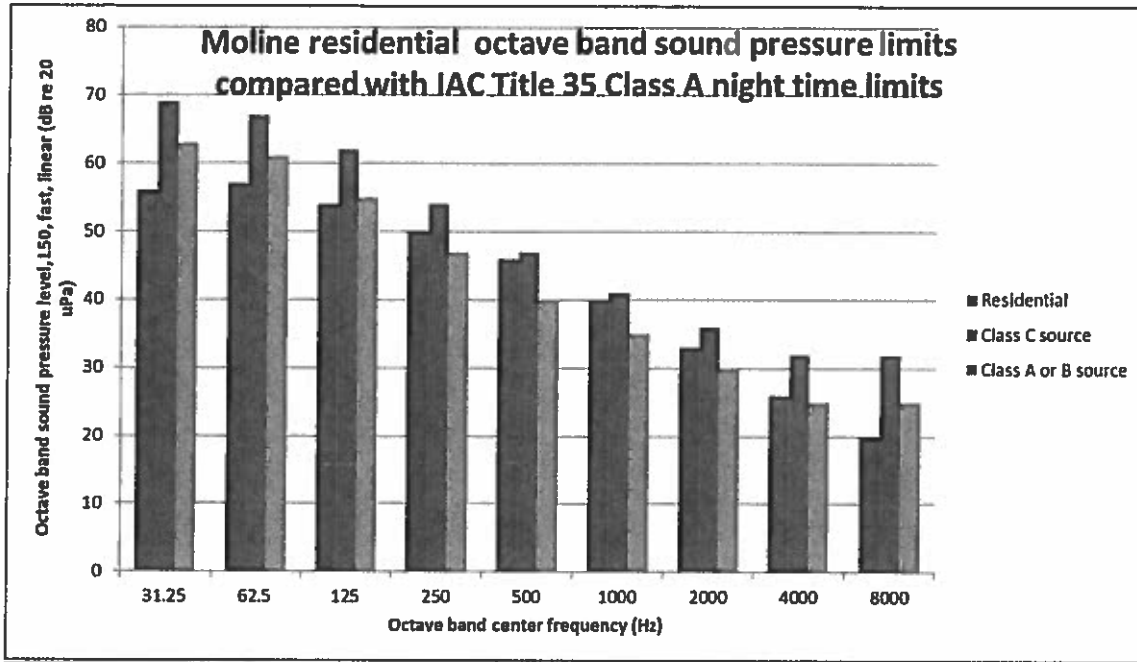
**Octave Band Sound Pressure Level, (dB re 20 uPa, L50, linear, fast)**

<b>Octave Band Center Frequency (Hz)</b>	<b>Agriculture, Business, and Industrial Districts</b>	<b>Office Conservation and Residential Districts</b>
<b>31.25</b>	<b>71</b>	<b>56</b>
<b>62.5</b>	<b>73</b>	<b>58</b>
<b>125</b>	<b>69</b>	<b>54</b>
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<b>500</b>	<b>61</b>	<b>46</b>
<b>1000</b>	<b>55</b>	<b>40</b>
<b>2000</b>	<b>48</b>	<b>33</b>
<b>4000</b>	<b>41</b>	<b>26</b>
<b>8000</b>	<b>35</b>	<b>20</b>

**Comparison of Converted Octave Band Sound Pressure Levels with Illinois Administrative Code**

The following two figures compare Moline’s converted octave band sound pressure level limits with IAC Title 35. Moline’s code tends to follow state Class A levels toward the low and high frequency bands and state Class C levels near the center bands.





Please call or email with questions or to discuss this interpretation and recommendations. I will be glad to attend a Planning Commission meeting to discuss this further.

Sincerely,

Jon W. Mooney, PE  
Senior Engineer  
mooneyjw@kjww.com

JWM/jlm

[http://portal/Projects/13.0860.00/Correspondence/ltr.20131216.jonmoo.tech review of noise code with recommendations.docx](http://portal/Projects/13.0860.00/Correspondence/ltr.20131216.jonmoo.tech%20review%20of%20noise%20code%20with%20recommendations.docx)

**References**

Beranek, *Acoustical Measurements*, American Institute of Physics, NY, 1988

Crocker and Price, *Noise and Noise Control Engineering*, CRC Press, Cleveland, 1975

General Radio Company, *The General Radio Experimenter*, Volume XXVI No. 4, September, 1951

Illinois Administrative Code, TITLE 35: ENVIRONMENTAL PROTECTION, SUBTITLE H: NOISE, CHAPTER 1: POLLUTION CONTROL BOARD, PART 901, SOUND EMISSION STANDARDS AND LIMITATIONS FOR PROPERTY LINE-NOISE-SOURCES

