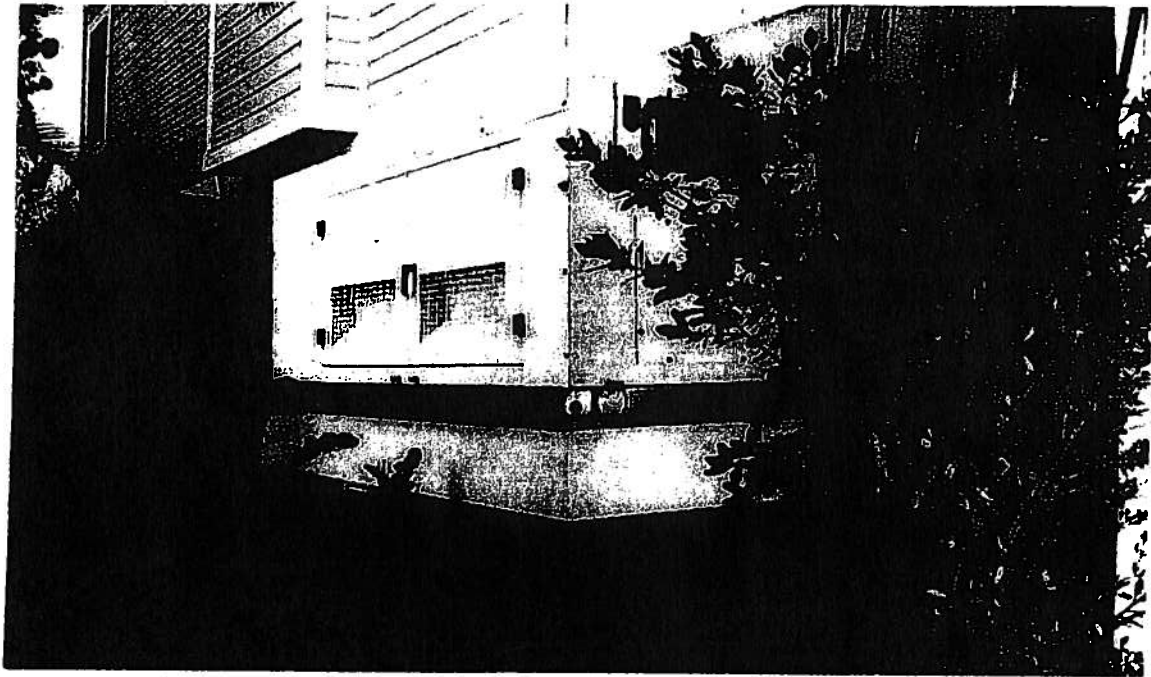




Guide to the City of Sanibel's Emergency Electrical Power Generator Regulations

June 2008



On April 15, 2008, the Sanibel City Council adopted Ordinance No. 08-006 which revised the City's regulations pertaining to the permitting and operation of emergency electrical power generators.

This guide is intended to assist home and business owners with the permitting process and to ensure the safe operation of permanently installed Emergency Electrical Power Generators. Included in this guide are:

- Definitions of terms frequently used by the City's Emergency Electrical Power Generator Regulations;
- Answers to frequently asked questions about the City's Emergency Electrical Power Generator Regulations; and
- Development Permit Application Form for an Emergency Electrical Power Generator, including examples of applications to assist with the permitting process.

NOTICE TO PROPERTY AND BUSINESS OWNERS

While the City of Sanibel is committed to assisting home and business owners with the permitting process necessary to ensure the safe installation and operation of emergency electrical power generators, it is important to recognize that Sanibel is a barrier island. In the event of a tropical storm or hurricane it is not safe to remain in the City of Sanibel when a mandatory evacuation order is issued. The installation of emergency electrical power generators must not be considered as an alternative to evacuation.

Definition of Key Terms

Electrical Power Generator means any machine or equipment that changes mechanical energy into electrical energy, either portable or permanently installed, used as secondary source to generate electrical power.

Emergency Electrical Power Generator means an electrical power generator that is intended to be operated during emergencies when there is an electrical power interruption, malfunction, or failure of the primary electric service, particularly when such primary service is disrupted for any extended length of time following a tropical storm, hurricane or other catastrophic event. However, any generator operating as a secondary energy or power source in circumstances other than an electrical power outage or during its performance testing cycle shall not be considered an emergency electrical power generator.

Permanently Installed Electrical Power Generator means an electrical power generator that is permanently installed on a fixed foundation, and is permanently wired into the building's electrical system, and is equipped with an automatic or manual transfer switch that will automatically or manually turn off the generator when power is restored.

Portable Electrical Power Generator means an electrical power generator that does not meet the definition of a permanently installed electrical power generator.

Sound Attenuation means the application of any design or construction methods, such as increased setbacks, noise dampening structures and enclosures, sound barriers, vibration absorbers, exhaust mufflers, and landscape barriers, used to mitigate the noise produced by an electrical power generator, as measured in dB(A).

Answers to Frequently Asked Questions

1. Is a permit required for a portable electrical power generator?

No development permit is required for the operation of a portable electrical power generator. However, please consult with LCEC, lcec.net, regarding the safe operation of portable emergency electrical power generators. Copies of this information are also available from the Planning Department.

2. What permits are required for the installation of a permanently installed emergency electrical power generator?

A development permit and building/electrical permits are required for the installation of a permanently installed emergency electrical power generator.

A short-form development permit application is available for a permanently installed emergency electrical power generator that complies with the standards of Ordinance 08-006. A development permit application form for an Emergency Electrical Power Generator is attached to this Guide.

A long form development permit application (Planning Commission public hearing and approval) is required for an emergency electrical power generator intended for general, unrestricted use. Unrestricted use means that there are no restrictions on the operation of an electrical power generator which limit its use to times when the primary electrical service is out or for the performance testing cycle of the generator.

3. What information is required to submit a development permit application for an emergency electrical power generator?

A development permit application for a permanently installed electrical power generator shall include the following:

- 1. Completed application form** (See Attachment) for an emergency electrical power generator;
- 2. Property owner's authorization form;**
- 3. Survey of the subject parcel;**
- 4. Site development plan**, that may be included as part of the survey. The site development plan shall include the location and construction specifications for a sound barrier wall, if needed to

meet the allowable maximum permissible sound pressure levels established in Ordinance 08-006. The site development plan must also demonstrate compliance with all required setbacks from property lines and indicate the relationship of the generator's location to any dwelling unit or structure within 20 feet of the generator;

5. **Identification of the generator's manufacturer, model name and number, and load capacity or running watts;**
6. **The manufacturer's certification of sound pressure (noise) level expressed in dB(A) at 7 meters (23 feet), with the generator operating under normal or average load;**
7. **A plan for screening the generator from view from off the subject property;**
8. **The applicant can elect to forgo requirements (9) and (10) below where the calculated sound pressure level at the applicant's property line is 78 dB (A) or less, according to the equation and procedures provided in Ordinance 08-006, subsection (2)(d);**
9. **A certified sound attenuation plan.** Certification shall be by an individual qualified as required below; and
10. **Certification of sound pressure (noise) levels anticipated at the subject's property lines expressed in dB (A).** Such certification shall be by (1) a board certified member of the Institute of Noise Control Engineering; or (2) by an individual who has been qualified as an expert witness in the field of acoustics or noise control engineering by a court of competent jurisdiction; or (3) by an individual who has demonstrated competence in the field of acoustics or noise control engineering through a combination of education, training, and experience.

It should be noted that the Completion Certificate for the emergency electrical power generator will not be issued until the City has measured the actual sound pressure level of the installed generator and determined that it complies with the standards found in Ordinance 08-006, regardless of the results of the equation for calculating the "Generator's Sound Pressure Level [dB(A)] at the Property Line".

The checklist on side two of the Development Permit Application Form for Emergency Electrical Power Generators also lists the necessary attachments for submittal as part of the development permit application.

4. What is the sound pressure level limit for permanently installed emergency electrical power generators?

An emergency electrical power generator operating when the primary electric service (Lee County Electric Cooperative) is disrupted, or during the generator's performance testing cycle, shall not exceed a maximum sound pressure level of 78 dB(A), when measured at any point from any property line.

Electrical power generators for general, unrestricted use are subject to the maximum permissible sound levels established in Chapter 30, Article III, Section 30-64 of the City's Code of Ordinances. Unrestricted use means that there are no restrictions on the operation of an electrical power generator which limit its use to times when the primary electrical service is out or for the performance testing cycle of the generator.

5. How can I obtain a copy of Ordinance 08-006 and the specific standards for emergency electrical power generators?

Ordinance 08-006 is available on-line @www.mysanibel.com; Chapter 126 Zoning, Article XIV. Supplementary District Regulations, Division 16. Emergency Electrical Power Generators, Sections 126-1305 through 126-1307.

Copies of Ordinance 08-006, the development permit application form for emergency electrical power generators, as well as a special attachment providing examples of how to complete calculations of sound pressure levels for emergency electrical power generators are also available at the Permitting Assistance Counter of the Sanibel Planning Department located at City Hall, 800 Dunlop Road, Sanibel, Florida. It is also possible to have copies of these items mailed or faxed to you by phoning the Planning Department at 239-472-4136.

Contacts for Additional Information

Contact the Planning Department at 239-472-4136, or e-mail Sanibel.Plan@mysanibel.com if you have questions about Emergency Electrical Power Generator Regulations or the attached Development Permit Application for Emergency Electrical Power Generators.

EMERGENCY ELECTRICAL POWER GENERATOR

CITY OF SANIBEL DEVELOPMENT PERMIT APPLICATION

APPLICATION NO. _____ DP FILING DATE: _____ ACCEPTED BY: _____
FEE PAID: _____

OTHER APPLICATIONS FILED WITH THIS REQUEST: _____

NOTE:

- No development permit is required for the operation of a portable electrical power generator.
- A development permit and building/electrical permits are required for the installation of a permanently installed electrical power generator.

PART I. PARCEL IDENTIFICATION

TAX STRAP NUMBER: _____ -46- _____ -T _____ - _____ . _____

STREET ADDRESS OF PROPERTY: _____

PART II. OWNER/APPLICANT INFORMATION

NAME OF OWNER: _____

OWNER ADDRESS: _____

OWNER PHONE NO: Home _____ Business _____ Fax _____

NAME OF APPLICANT: _____

APPLICANT ADDRESS: _____

APPLICANT PHONE NO: Home _____ Business _____ Fax _____

APPLICANT'S INTEREST IN PROPERTY: _____

PART III. PROVIDE A BRIEF DESCRIPTION OF THE PROPOSED DEVELOPMENT:

As an option to submitting a CERTIFIED SOUND ATTENUATION PLAN, complete the following equation for calculating the Generator's Sound Pressure Level [dB(A)] at the Property Line - Generator's corrected $dB(A) = Gen + A + B + C$

The calculations shall be based on the generator manufacturer's sound pressure level data ("Gen"), the distance the generator unit is placed from the closest point of the nearest property line ("A"), its proximity to applicant's existing structures, such as a wall of the applicant's home, ("B"), and whether a sound wall, located adjacent to the generator unit, is used for noise abatement ("C").

Generator's corrected dB(A) _____ = _____ + _____ + _____ + _____ .

The input for the terms "A", "B" and "C" in the Generator Sound Pressure Level [dB(A)] at the Property Line Equation are provided in the procedures provided in the attached Guide for Calculating Sound Pressure Levels for Emergency Electrical Power Generators and in Section 126-1305 of the Land Development Code.

PART IV. ATTACHMENTS CHECKLIST:

The information and attachments requested as part of this application are the minimum necessary to determine compliance with the requirements of The Sanibel Plan and the Land Development Code (LDC). The City may require additional information, at any time during the application process, to determine compliance with the requirements of the Sanibel Plan and the LDC. Provide three copies of all surveys and plans. For a complete explanation of each item, refer to the Planning Department handout entitled "Instructions for Permits and Other Applications of the Sanibel Land Development Code".

___ DEED (Copy)

___ OWNER'S AUTHORIZATION (Certified – Form available in City Planning Department)

___ SURVEY (SCALE 1"=20', showing all current site improvements)

___ SITE DEVELOPMENT PLAN – SCALE 1" = 20'

(Site development plan shall include the sound barrier wall, if needed to meet the allowable maximum permissible sound pressure levels established in Section 126-1306, and is to demonstrate compliance with all required setbacks from property lines and indicate the relationship of the generator's location to any dwelling unit or structure within 20 feet of the generator.)

___ IDENTIFICATION OF THE GENERATOR'S MANUFACTURER, model name and number, and load capacity or running watts.

___ MANUFACTURER'S CERTIFICATION OF SOUND PRESSURE (NOISE) LEVEL expressed in dB(A) at 7 meters (23 feet), with the generator operating under normal or average load.

___ PLAN FOR SCREENING GENERATOR from view from off the subject property

** CERTIFIED SOUND ATTENUATION PLAN. Certification shall be by (1) a board certified member of the Institute of Noise Control Engineering; or (2) by an individual who has been qualified as an expert witness in the field of acoustics or noise control engineering by a court of competent jurisdiction; or (3) by an individual who has demonstrated competence in the in the field of acoustics or noise control engineering through a combination of education, training, and experience.

** CERTIFICATION OF SOUND PRESSURE (NOISE) LEVELS ANTICIPATED AT THE SUBJECT'S' PROPERTY LINES expressed in dB(A). Certification shall be by (1) a board certified member of the Institute of Noise Control Engineering; or (2) by an individual who has been qualified as an expert witness in the field of acoustics or noise control engineering by a court of competent jurisdiction; or (3) by an individual who has demonstrated competence in the in the field of acoustics or noise control engineering through a combination of education, training, and experience.

___ RESULTS OF USING THE EQUATION FOR CACLULATION OF SOUND PRESSURE LEVELS FOR THE EMERGENCY ELECTRICAL POWER GENERATOR. (Refer to attachment for equation and examples.)

___ VEGETATION PLAN (if any native vegetation is impacted by the development)

___ OTHER INFORMATION REQUIRED FOR COMPLIANCE WITH THE LAND DEVELOPMENT CODE:

** The applicant can elect to forgo requirements for the certified sound attenuation plan and certification of sound pressure (noise) levels anticipated at the subject's property lines provided that the calculated sound pressure level at the applicant's property line is 78 dB(A) or less, according to the equation provided on page 1 (PART III) of this application form. The applicant needs to note that the completion certificate for the electrical power generator will not be issued until the City has measured the actual sound pressure level of the installed generator and determined that it complies with the standards found in Land Development Code Section 126-1306, regardless of the results of the Equation for calculating the "Generator's Sound Pressure Level [dB(A)] at the Property Line".

******* CERTIFICATION *******

I hereby certify that the information contained in this application and the attachments hereto are true and correct to the best of my knowledge and belief. Furthermore, I acknowledge that the City has the right to inspect the subject property in conjunction with this development permit application. (Please advise the City of any restrictions or limitations on the inspections.)

SIGNATURE OF OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE DATE



City of Sanibel

Planning Department

June 2008

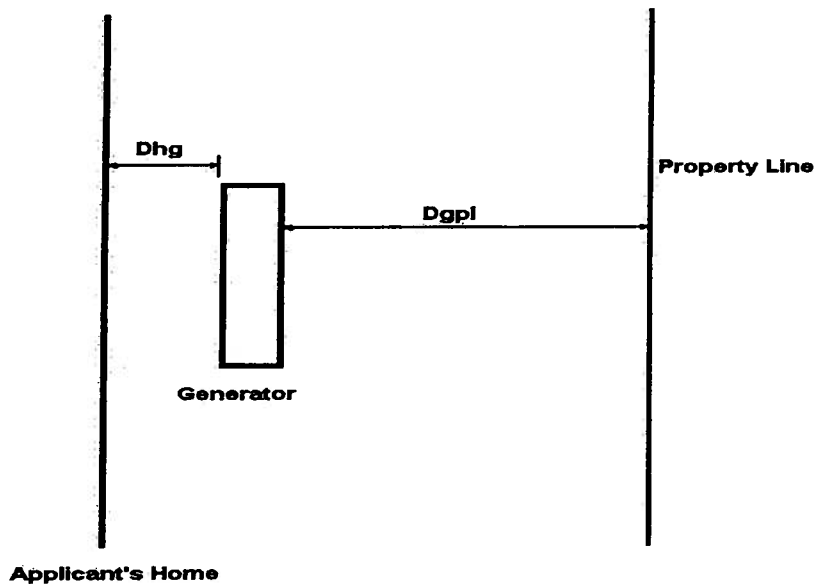
Guide for Calculating Sound Pressure Levels for Emergency Electrical Power Generators

The sound pressure level shall be computed using the following equation for calculating the “Generator’s Sound Pressure Level [dB(A)] at the Property Line”:

$$\text{Generator's corrected dB(A)} = \text{Gen} + A + B + C$$

The calculations shall be based on the generator manufacturer’s sound pressure level data (“Gen”), the distance the generator unit is placed from the closest point of the nearest property line (“A”), its’ proximity to the applicant’s existing structures, such as a wall of the applicant’s home (“B”), and whether a sound wall, located adjacent to the generator unit, is used for noise abatement (“C”). The distances from the applicant’s home (or other structure) to the generator (“B” or Dhg) and the distance from the generator to the closest point of the nearest property line (“A” or Dgpl) are defined in Figure 1 below:

Figure 1. Reference Distances Necessary for Generator Noise Calculation



Four major components are necessary for estimating the generator’s sound level at the applicant’s property line:

“Gen” = the generator Manufacturer’s sound level data. These data must be in the form of A-weighted sound level, or dB(A), at 7 meters (23 feet) from the generator in a free-field environment.

- “A” = a correction for the closest actual distance from the generator’s surface to the applicant’s property line
- “B” = a correction for reflective sound based on the distance the generator is located relative to the wall of a structure or the applicant’s home
- “C” = a correction for a sound barrier constructed such that it fully blocks the line of sight to the generator when viewed from the applicant’s property line (if applicable).

The input for the terms “A”, “B” and “C” in the Generator Sound Pressure Level [dB(A)] at the Property Line Equation are provided in Tables 1 through 3, respectively.

Table 1. Correction (“A”) for Distance from Generator to Property Line

<u>Actual Distance from Generator to closest point of nearest Property Line in feet (dqpl)*</u>	<u>Distance Correction (A)</u>
5 **	+11 dB(A)
6 **	+10 dB(A)
7 **	+9 dB(A)
8 **	+8 dB(A)
9 **	+7 dB(A)
10	+6 dB(A)
12	+5 dB(A)
14	+4 dB(A)
16	+3 dB(A)
17	+2 dB(A)
20	+1 dB(A)
23	0 dB(A)
27	-1 dB(A)
30	-2 dB(A)
33	-3 dB(A)
37	-4 dB(A)
43	-5 dB(A)
46	-6 dB(A)
53	-7 dB(A)
60	-8 dB(A)
66	-9 dB(A)
73	-10 dB(A)
83	-11dB(A)
92	-12 dB(A)

*Select distance equal to or just less than the actual distance the generator is located from the closest point to the nearest property line. For example, if the generator’s closest surface is located at an actual distance of 45 feet from the property line, a value corresponding to the 43 feet correction [minus -5dB(A)] from Table 1 must be used.

**The minimum setback from a property line is 10 feet.

Table 2. Correction (“B”) for Reflected Sound from Applicant’s Home

<u>Distance from Generator to Home or closest structure in feet (dhg)*</u>	<u>Reflection Correction (B)</u>
Closer than or equal to 5 feet	+3 dB(A)
Further than 5 feet and closer than or equal to 10 feet	+2 dB(A)
Further than 10 feet and closer than or equal to 20 feet	+1 dB(A)
Further than 20 feet	+0 dB(A)

Table 3 Correction (“C”) for Presence of a Sound Barrier Wall

<u>Will a Sound Barrier Wall be Used?</u>	<u>Sound Barrier Correction (C)**</u>
Yes	-5 dB(A)
No	0 dB(A)

**** A sound barrier wall can only be used for input in the calculation of the “Generator’s Sound Pressure Level [dB(A)] at the Property Line Equation” for an emergency electrical power generator that is located so that the bottom of the generator is no higher than four feet above the finished grade of the ground. The sound barrier wall must extend from the ground to a minimum of two feet higher than the top of the generator and extend a minimum of two feet past the sides of the generator. A sound barrier wall must have no gaps, holes or penetrations. Walls of masonry, concrete block or wood construction meeting the above requirements are considered adequate. Foliage is not an adequate sound barrier.**

EXAMPLES

Examples using the equation for calculating the “Generator’s Sound Pressure Level [dB(A)] at the Property Line”

Example 1.

An applicant wishes to place an emergency electric generator on his property. The generator’s manufacturer provides data indicating a sound level of 65 dB(A) will be obtained at a distance of 23 feet. The applicant plans on placing the generator 6 feet from his home (Dhg) and the generator’s closest surface will be located a distance of 15 feet from the closest location of the property line (Dgpl). The applicant does not intend to use a sound barrier wall.

Use Equation for Generator’s Sound Pressure Level [dB(A)] at Property Line:

$$\text{Generator's corrected dB(A)} = \text{Gen} + \text{A} + \text{B} + \text{C}$$

$$\text{Gen} = 65 \text{ dB(A)}$$

$$\text{A} = +4 \text{ dB(A) (from Table 1)}$$

$$\text{B} = +2 \text{ dB(A) (from Table 2)}$$

$$\text{C} = 0 \text{ dB(A) (from Table 3)}$$

$$\text{Generator's corrected dB(A)} = 65 + 4 + 2 + 0 = 71\text{dB(A)}$$

Example 2.

An applicant would like to place an emergency electric generator on his property. The generator’s manufacturer provides data indicating a sound level of 74 dB(A) will be obtained at a distance of 23 feet. The applicant plans on placing the generator 5 feet from his home (Dhg) and the generator’s closest surface will be located a distance of 48 feet from the closest location of the property line (Dgpl). The applicant intends to construct a sound barrier wall around the generator unit that meets the criteria provided in Table 3 of this section.

Use Equation for Generator’s Sound Pressure Level [dB(A)] at the Property Line:

$$\text{Generator's corrected dB(A)} = \text{Gen} + \text{A} + \text{B} + \text{C}$$

$$\text{Gen} = 74 \text{ dB(A)}$$

$$\text{A} = -6 \text{ dB(A) (from Table 1)}$$

$$\text{B} = +3 \text{ dB(A) (from Table 2)}$$

$$\text{C} = -5 \text{ dB(A) (from Table 3)}$$

$$\text{Generator's corrected dB(A)} = 74 - 6 + 3 - 5 = 66\text{dB(A)}$$

COMPLIANCE

When the use of the equation for calculating the “Generator’s Sound Pressure Level [dB(A)] at the Property Line” does not result in a sound pressure level of 78dB(A)s or less, the applicant has the alternative to relocate the proposed siting of the generator or prepare a certified sound attenuation plan that certifies the sound pressure (noise) levels anticipated at the subject’s property lines. This sound attenuation plan must be certified by a board certified member of the Institute of Noise Control Engineering, an individual who has been qualified as an expert witness in the field of acoustics or noise control engineering by a court of competent jurisdiction or an individual who has demonstrated competence in the field of acoustics or noise control engineering through a combination of education, training, and experience.

Regardless of which method is used (the equation or the sound attenuation plan) to demonstrate that the sound pressure level of the installed generator at the closest point of the nearest property line, no completion certificate or other final City approval shall be issued for a permanently installed emergency electrical power generator until the City has measured the sound pressure level of the permitted generator and determined that it does not exceed the maximum permitted sound pressure levels of emergency electrical power generators.