
July 31, 2012

Mr. Dan Shriver
Florida Tower Partners
1001 3rd Avenue West, Suite 420
Bradenton, FL 34205

Subject: North Atlantic Towers- Branford – Noise Study
171 Short Beach Road, Branford, CT 06405
Proposed Telecommunications Tower Facility

Dear Mr. Shriver:

At the request of the Connecticut Siting Council (CSC), Infinigy Engineering, PLLC (*Infinigy*) has completed a noise study to determine the noise generated by the proposed facility. The noise generating devices are the emergency backup generator and the HVAC units. The generator operates approximately fifteen minutes per week and then continually during emergency situations where commercial power is interrupted. The HVAC units operate during the summer hours when the interior building thermostat demands cooling.

The proposed facility is located immediately adjacent to the western property line (Branford Land Trust, Inc.) and approximately (136 feet) from the nearest residence located at 177 Short Beach Road.

We researched both the *Zoning Regulations of the Town of Branford* and the Connecticut State Regulations regarding emergency generator noise regulations. Specific to the Town's Zoning bylaws, *Chapter 189. Noise, Section 189-5, Subsection D. Exemptions*, reads as follows:

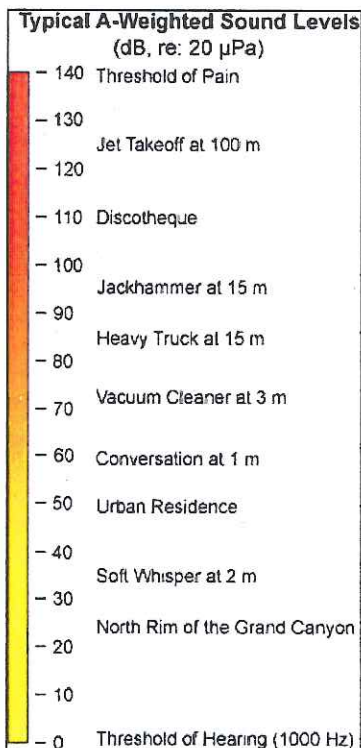
The following shall be exempt from these regulations subject to special conditions as spelled out:
(2) Noise created as a result of or relating to an emergency.

The State of Connecticut Department of Environmental Conservation has regulations for the *Control of Noise. Sec. 22a-69-1.8. Exemptions*, reads as follows:

Exempted from these Regulations are... (f) Noise created as a result of, or relating to, an emergency.

The specified generator is a Generac, 50 KW, diesel powered in a level 2A enclosure. Sound levels at a distance of twenty three (23) feet equals seventy one (71) dBA. The generator produces comparatively more noise than the HVAC units so in calculating worst case sound levels, only the generator is considered.

Sound pressure level (L) is measured in decibels (dB) and is what is heard by the human ear. The following OSHA table compares known, everyday objects and is a good comparison to varying sound levels.



Sound level (L) decreases approximately six (-6) db for every doubling of distance. For example, at a distance of (2 x 23 feet = 46 feet), the dB level of the generator would decrease to (71 - 6 = 65 dB). This does not consider any additional sound attenuation such as the heavy woods surrounding the proposed site, or intervening buildings. The actual engineering calculation for sound level versus distance is:

$$L2 = L1 - 20\log(R2/R1)$$

L2 = Sound level at location 2

L1 = Sound level at original location

R2 = distance from generator at location 2

R1 = distance from generator at original location.

Per the engineering guidelines stated above, the following worst case decibel levels are calculated as follows. Again, it should be noted that no consideration was given to the heavy woods intervening between the proposed site and the calculated points of reference:

Branford Land Trust (closest property line):	71 dB
136-feet east to the closest residence:	55.6 dB

Even though neither the Town nor the State regulate noise from temporarily operating emergency generators, it is prudent to consider the ancillary effects of noise on abutting neighbors or other affected parties. As such, the design has been modified to install the generator interior to the site and the level 2A enclosure has been specified as part of the installation. Further, Infinigy recommends the weekly, (15) minute exercise event with the generator operating, be limited to between 9 AM and 5 PM, weekdays only.

Infinigy acknowledges the generator noise will be audible from the property lines and closest residence. But the noise levels will only be in emergency situations and not considered significant when compared to existing ambient noise levels.

Should you have any questions, comments or concerns regarding this issue, please feel free to contact me at 518-690-0790 at your convenience.

Sincerely,



Infinigy Engineering, PLLC

John S. Stevens, P.E.

Principal





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July 31, 2012

Mr. Dan Shriver
Florida Tower Partners
1001 3rd Avenue West, Suite 420
Bradenton, FL 34205

Subject: North Atlantic Towers- East Haven Riverside VFD – Noise Study
82 Short Beach Road, East Haven, CT 06512
Proposed Telecommunications Tower Facility

Dear Mr. Shriver:

At the request of the Connecticut Siting Council (CSC), Infinigy Engineering, PLLC (*Infinigy*) has completed a noise study to determine the noise generated by the proposed facility. The noise generating devices are the emergency backup generator and the HVAC units. The generator operates approximately fifteen minutes per week and then continually during emergency situations where commercial power is interrupted. The HVAC units operate during the summer hours when the interior building thermostat demands cooling.

The proposed facility is located immediately adjacent to the western property line and approximately (115 feet) from the nearest residence located at 90 Short Beach Road. The distance references the separation from the revised generator location (rev 4, 7/31/12) and the residence.

We researched both the *Zoning Regulations of the Town of East Haven* and the Connecticut State Regulations regarding emergency generator noise regulations. Specific to the Town's Zoning bylaws, *Chapter 12 Offenses and Miscellaneous Provisions, section Article IV. Noise, Section 12.54 Exemptions* reads as follows:

The following shall be exempt from the prohibitions set forth in this article, subject to any special conditions which may be set forth herein: (g) Noise created as a result of or relating to an emergency.

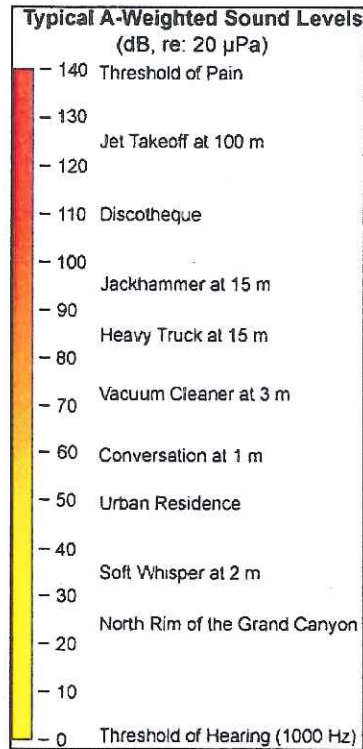
There is no mention of noise in *SECTION 49 – Wireless Communication Facilities*.

The State of Connecticut Department of Environmental Conservation has regulations for the *Control of Noise. Sec. 22a-69-1.8. Exemptions*, reads as follows:

Exempted from these Regulations are... (f) Noise created as a result of, or relating to, an emergency.

The specified generator is a Generac, 50 KW, diesel powered in a level 2A enclosure. Sound levels at a distance of twenty three (23) feet equals seventy one (71) dBA. The generator produces comparatively more noise than the HVAC units so in calculating worst case sound levels, only the generator is considered.

Sound pressure level (L) is measured in decibels (dB) and is what is heard by the human ear. The following OSHA table compares known, everyday objects and is a good comparison to varying sound levels.



Sound level (L) decreases approximately six (-6) db for every doubling of distance. For example, at a distance of (2 x 23 feet = 46 feet), the dB level of the generator would decrease to (71 - 6 = 65 dB). This does not consider any additional sound attenuation such as the heavy woods surrounding the proposed site, or intervening buildings. The actual engineering calculation for sound level versus distance is:

$$L2 = L1 - 20\log(R2/R1)$$

L2 = Sound level at location 2

L1 = Sound level at original location

R2 = distance from generator at location 2

R1 = distance from generator at original location.

Per the engineering guidelines stated above, the following worst case decibel levels are calculated as follows. Again, it should be noted that no consideration was given to the heavy woods intervening between the proposed site and the calculated points of reference:

45-feet west to the closest property line:

65 dB

115-feet east to the closest residence:

57 dB

Even though neither the Town nor the State regulate noise from temporarily operating emergency generators, it is prudent to consider the ancillary effects of noise on abutting neighbors or other affected parties. As such, the design has the generator against the rear property line which is owned by the Branford Land Trust, Inc. It is our understanding this property is to remain undeveloped and as such will minimize public interaction. Further, the level 2A enclosure has been specified as part of the installation which helps diminish the noise levels. Further, Infinigy recommends the weekly, (15) minute exercise event with the generator operating, be limited to between 9 AM and 5 PM, weekdays only.

Infinigy acknowledges the generator noise will be audible from the property lines and closest residence. But the noise levels will only be in emergency situations and not considered significant when compared to existing ambient noise levels.

Should you have any questions, comments or concerns regarding this issue, please feel free to contact me at 518-690-0790 at your convenience.

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