

STATEMENT OF KEVIN PLUMB

CT SITING COUNCIL NOT ENFORCING USE OF EIA/TIA 222 G- BASIC WIND SPEED WITH & WITHOUT ICE

CONNECTICUT SITING COUNCIL APPLICATION 421

TRUMBULL, CONNECTICUT

I am a resident of Trumbull, Connecticut. I reside at 10 Marina Avenue. I am a Professional Broadcast Engineer (CPBE) specializing in RF and transmission systems, with over 25 years of continuous service. In addition to my normal duties I am the engineer for several tower sites across the United States, responsible for the construction, maintenance, safety, FCC compliance, and day to day operations. I hold numerous industry certifications including the CPBE (certified professional broadcast engineer (#50916) issued by the Society of Broadcast Engineers issued July 1st 2009. I have been asked by CATT to submit comments regarding the Connecticut Siting Council Docket 421, applicant T-Mobile

BACKGROUND

T Mobile seeks to install a communications facility alongside the Trumbull Police Headquarters building on Edison Road located, within a high density residential neighborhood. The proposed supporting structure for this communication system will be a standard monopole. In order to accommodate existing public safety land / mobile 2 way radio systems the proposed monopole support structure will also include a platform at the top of the structure.

Basic Wind Speed and Basic Wind Speed with Ice

By using EIA/TIA 222-G the structure would be designed to the Basic Wind Speed or the Basic Wind Speed with Ice that is derived from the Standard's county by county listings. These values are taken from wind and ice maps prepared by ASCE. These maps are made by interpolating between stations (usually airports) at which the wind and ice values are calculated, resulting in contour lines of equal wind speed and ice thickness. When there are two or more contour lines passing through a county, the minimum and maximum values are given. You will be required to assess the wind speed of your site's location. It's also necessary to check whether the structure is to be built in a special wind zone area or if the permitting authority requires a higher wind speed or ice thickness than provided for in the Standard.

Revision D's significant change introduced Basic Wind Speed which is used in the Revision F standard. Revision G incorporates a performance-based approach called "limit states design" to ensure that structures are safe under extreme loading conditions. By comparison, the old standard, which uses a "serviceability limit states" approach and checks only that the structure is capable of the service under normal conditions. Presently, wind loading is calculated according to the Fastest-Mile Wind Speed for the structure's location as recorded from the 1-in-50-year wind speeds encountered at that location that were constant over a distance of one mile. This is calculated differently in Revision G because the government has stopped measuring wind in this manner, using a more accurate and larger set of wind measurements.

The new revision requires that wind loading be calculated according to the three-second-gust wind speed, allowing the tower's design to accommodate instantaneous loads. Most National Weather Service sites record three-second gust wind speeds which will provide for more accurate averages for Rev G and future revisions. Ice loads are escalated with height and seismic loads, and by geographic area. All three loadings will be determined by specific local county criteria from wind, ice, and seismic maps.

Rev G's many changes meet or exceed the local and national building codes and the standard is being accepted by those agencies that enforce them. Rev G offers solutions for seismic and ice loading as well as providing a distinction between an urban and rural environment for design purposes. It redefines what constitutes a wind load. Rev F required the designer to consider ice loading on the structure; Rev G makes it mandatory as detailed in an ice loading map in the revision which is based upon the tower height, elevation and exposure.

Additional safety considerations for erection and maintenance for qualified and experienced personnel are addressed in the new standard for climbing and working facilities, requiring minimum capacities to support man loads and safety equipment. The standard includes new design theories to determine the capacity of a tower's steel members.

Antenna mounts are now recognized as an extension of the tower and will be required to be designed to support the same loading as the tower. New grounding specifications have also been introduced.

| | Minimum Basic Wind Speed(MPH) | Maximum Basic Wind Speed(MPG) | Special Wind Region |
|------------|-------------------------------|-------------------------------|---------------------|
| FAIRFIELD | 90 | 110 | Yes |
| HARTFORD | 90 | 105 | |
| LITCHFIELD | 90 | 100 | Yes |
| MIDDLESEX | 100 | 120 | |
| NEW HAVEN | 95 | 115 | |
| NEW LONDON | 105 | 120 | |
| TOLLAND | 95 | 105 | |
| WINDHAM | 100 | 110 | |

Conclusion

The CSC should require that this tower be built to the most up to date tower structural standard EIA/TIA 222-G. Based on the simple fact this tower will be located at the Trumbull Emergency Operations center and the primary use will be essential emergency communications.

12/13/11
Kevin Burns

The above signed, *Kevin Burns*, being known to me or after satisfactory proof of identification, personally appeared before me and verified the above prefilled testimony for the Connecticut Siting Council dated *12/13/11* is true and accurate and that they adopted it as their free act and deed on the *13* day of December, 2011.

CT Notary My Commission Expires/ Connecticut Commissioner of the Superior Court

John C. Gigante *12/13/2011*
(signature/date)

John C. Gigante
Notary Public State of CT
My Commission expires 12/31/2016

