



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square  
New Britain, Connecticut 06051  
Phone: (860) 827-2935  
Fax: (860) 827-2950

August 8, 2002

Peter W. van Wilgen  
SNET Mobility, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067-3900

RE: **EM-CING-001-032-129-134-142-146-160-020718** - SNET Mobility, LLC notice of intent to modify existing telecommunications facilities located in Andover, Coventry, Somers, Stafford Springs, Tolland, Vernon, and Willington, Connecticut.

Dear Mr. van Wilgen:

At a public meeting held on August 1, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated July 18, 2002. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility sites that would not increase tower heights, extend the boundaries of the tower site, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Any additional change to these facilities will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston  
Chairman

MAG/laf

c: See attached list.

List Attachment.

Honorable Edward F. Turn, Sr., First Selectman, Town of Andover  
Honorable Joan A. Lewis, Town Council Chairman, Town of Coventry  
John A. Elsesser, Town Manager, Town of Coventry  
Eric M. Trott, Director of Planning and Development, Town of Coventry  
Honorable Richard H. Jackson III, First Selectman, Town of Somers  
James Taylor, Zoning Enforcement Officer, Town of Somers  
Honorable Gordon J. Frassinelli, Jr., First Selectman, Town of Stafford  
Wendell Avery, Zoning Enforcement Officer, Town of Stafford  
Honorable Richard C. Knight, Town Council Chairman, Town of Tolland  
Timothy J. Tieperman, Town Manager, Town of Tolland  
Ronald Blake, Town Planner, Town of Tolland  
Honorable Diane Wheelock, Mayor, Town of Vernon  
Gene F. Bolles, Zoning Enforcement Officer, Town of Vernon  
Susan Jorgensen, Zoning Enforcement Officer, Town of Willington  
Honorable John Patton, First Selectman, Town of Willington

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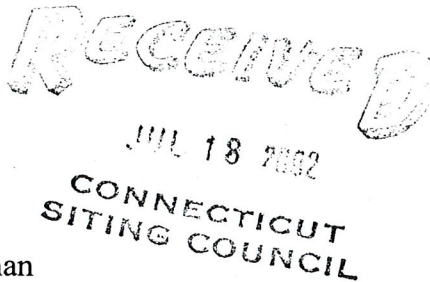


**SNET Mobility, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7730  
Fax: (860) 513-7190

**Peter W. van Wilgen**  
*Senior Manager – Construction*

HAND DELIVERED

July 18, 2002



Mr. Mortimer A. Gelston, Chairman  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051

Re: SNET Mobility, LLC notice of intent to modify existing telecommunications facilities located in Andover, Coventry, Somers, Stafford Springs, Tolland, Vernon and Willington

Dear Mr. Gelston:

In order to accommodate technological changes, implement E-911 capability and enhance system performance, SNET Mobility, LLC ("SNET" or "Cingular Wireless") plans to modify the antenna configurations at its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of each of the municipalities in which an affected cell site is located.

Attached are summary sheets detailing the planned changes, including power density calculations reflecting the change in the effect of Cingular's operations at each site. Also included is documentation of the structural sufficiency of each tower to accommodate the revised antenna configuration.

The changes to the facilities do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facilities will not be significantly changed or altered. Rather, the planned changes to the facilities fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

Mr. Mortimer A. Gelston

July 18, 2002

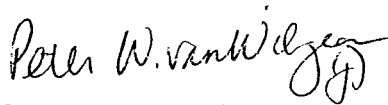
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1. The height of the overall structure will be unaffected. At almost all sites, new panel antennas approximately the same size will replace those previously installed. Tower mount amplifiers, approximately 5" x 9" x 13", will be added to the platform on which the panel antennas are mounted to enhance signal reception at the cell site. In addition, the mandated provision of E-911 capability will require installation of one LMU ("location measurement unit"), approximately 5 inches high, on either the tower, the equipment shelter or the ice bridge. One GPS receive-only antenna will be attached to the equipment shelter at each site. None of the modifications will extend the height of the tower.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. Radio frequency power density will increase due to use of additional channels broadcasting at higher power. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, Cingular Wireless respectfully submits that the proposed changes at the referenced sites constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7730 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Peter W. van Wilgen  
Senior Manager - Construction

Enclosures

**CINGULAR WIRELESS  
Antenna Modification**

**Site Address:** Riley Mountain Road, Coventry  
tower share 10/18/01

**Tower Owner/Manager:** Sprint Sites USA

**Antenna configuration** Antenna center line – 117'

**Current and/or approved:** 12 DB846H80 or comparable

**Planned:** 9 CSS DUO4-8670 or comparable  
6 tower mount amplifiers  
1 LMU (at 60')

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 8.5% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 12.1%, or an additional 3.6% of the standard.

Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
SNET	117	880 - 894	19	100	0.0499	0.5867	8.5

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
SNET TDMA	117	880 - 894	16	100	0.0420	0.5867	7.2
SNET GSM	117	880 - 894	2	296	0.0155	0.5867	2.7
SNET GSM	117	1930 - 1935	2	427	0.0224	1.0000	2.2
<b>Total</b>							<b>12.1%</b>

**Structural information:** Please see attached.

## 1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 152' monopole (extendable to 193') located on 400 Riley Mountain Road in Coventry, Connecticut. The analysis was conducted in accordance with the TIA/EIA-222-F standard for wind velocity of 90 mph bare and 78 mph concurrent with ½" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined on the following page of this report.

The results of the analysis indicate that the structure is in compliance with the loading conditions and the material and member sizes for the monopole and foundation. The monopole is considered feasible with the TIA/EIA-222-F wind load classification specified above and all the existing and proposed antenna loading.

This analysis is based on:

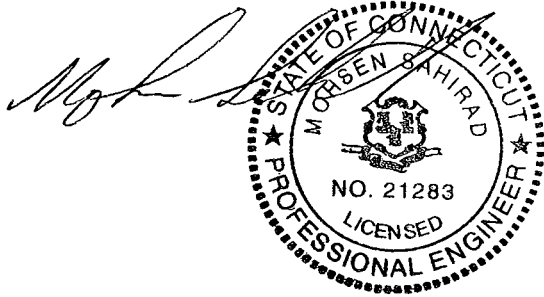
- 1) Tower and foundation design prepared by Engineered Endeavors Inc. job no. 7831 approved September 25, 2000.
- 2) Antenna inventory as specified on the following page of this report.
- 3) TIA/EIA-222-F wind load classification.

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the assumption of the antenna and mount configuration and that adequate space is available for routing the coaxial cable inside the monopole prior to installation. Notify the engineer immediately if any of the assumptions in this report are found to be other than specified.

If you should have any questions, please call.

Sincerely,

**URS Corporation AES**



Mohsen Sahirad, P.E.  
Senior Structural Engineer

MS/rmn

cc: Richard R. Johanson – Bechtel  
Doug Roberts – URS  
I.A. – URS  
A.A. – URS  
CF/Book

**Introduction:**

A structural analysis of this 152' communications monopole (extendable to 193') was performed by URS Corporation AES (URS) for Cingular Wireless. The monopole is located on 400 Riley Mountain Road in Coventry, Connecticut.

The monopole and its foundation were designed by Engineered Endeavors Inc. job no. 7831 approved September 25, 2000.

This analysis was conducted to evaluate twist (rotation), sway (deflection), and stress on the monopole. The analysis was also used to find the effect of the forces to the foundation resulting from the antenna arrangement listed below.

The antenna and mount configuration:		<u>Antenna Centerline Elevation</u>
(9) DB980H90 antennas with low profile platform and (9) 1 5/8" coax cable within the monopole	Sprint	@ 147' elevation
(6) RR90-17-02DP antennas with low profile platform and (12) 1-5/8" coax cable within the monopole	Voicestream	@ 137' elevation
(12) DB844H80 antennas with low profile platform and (12) 1-5/8" coax cable within the monopole	Verizon	@ 127' elevation
(9) DUO4-8670 antennas and (6) amplifiers with low profile platform and (9) 1 1/4" coax cable within the monopole	Cingular (proposed)	@ 117' elevation
(6) Allgon 7250.03 antennas with (3) Stand-off arms and (12) 1 5/8" coax cable within the monopole	AT&T	@ 107' elevation
(1) GPS antenna with stand-off and (1) 1/2" coax cable	Cingular (proposed)	@ 60' elevation

**Note:**

- 1. Porthole may be required. Installation of porthole shall be done per manufacturer suggestion.**
- 2. The user of this report shall conduct verification on the assumption of the antenna and mount configuration and that adequate space is available for routing the coaxial cable inside the monopole prior to installation. Notify the engineer immediately if any of the assumptions in this report are found to be other than specified.**

## **Structural Analysis:**

### Methodology:

The structural analysis was done in accordance with TIA/EIA-222-F June 1996, Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Allowable Stress Design (ASD).

The analysis was conducted using ERI Tower 2.0. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA. The two load combinations were investigated in ERI Tower 2.0 to determine the stress, sway and rotation.

Load Condition 1 = 90 mph Wind Load (without ice) + Tower Dead Load  
Load Condition 2 = 78 mph Wind Load (with ice) + Ice Load + Tower Dead Load

The TIA/EIA standard permits one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For purposes of this analysis, allowable stresses of the monopole members were increased by one-third in computing the load capacity.

### **Evaluation of Monopole:**

Combined axial and bending stresses on the monopole structure were evaluated to compare with allowable stresses in accordance with AISC. The calculated stresses under the proposed loading were below the allowable stresses.

### Analysis Results:

Our analysis determined that the structure will support the proposed new antenna arrangements under the analysis criteria outlined on the previous page. No further analysis was conducted on the tower foundation since the forces calculated were below the original design.

Our analysis for the proposed new antenna arrangement and load condition is provided in Appendix A.

### **Limitations/Assumptions:**

This report is based on the following:

1. Tower inventory for antennas and mounts as listed in this report.
2. Tower is properly installed and maintained.
3. All members were as specified in the original design Documents and are in good condition.
4. All required members are in place.
5. All bolts are in place and are properly tightened.
6. Tower is in plumb condition.
7. All members are galvanized.
8. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
9. Foundations were properly constructed to support original design loads as specified in the original design Documents.
10. All co-axial cable is installed within the monopole, except as noted otherwise.



URS is not responsible for any modifications completed prior to or hereafter, which URS is not or was not directly involved. Modifications include but are not limited to:

1. Removing antennas
2. Adding antennas and amplifiers

URS hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon information contained and set forth herein. If you are aware of any information which conflicts with that which is contained herein, or you are aware of any defects arising from original design, material, fabrication, or erection deficiencies, you should disregard this report and immediately contact URS. URS disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.