STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

March 26, 2003

Kenneth C. Baldwin
Robinson & Cole
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-141-030317** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 61 Lowell Davis Road, Thompson, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on March 25, 2003, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, 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 March 17, 2003. 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 site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility 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,

Pamela B. Katz

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: Honorable Douglas J. Williams, First Selectman, Town of Thompson
John E. Mahon, Jr., Zoning Enforcement Officer, Town of Thompson
Wendy Thomas, KGI
Michelle G. Briggs, Southwestern Bell Mobile Systems

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STATE OF CONNECTICUT

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

March 17, 2003

Honorable Douglas J. Williams
First Selectman
Town of Thompson
Town Office Building
815 Riverside Drive
P. O. Box 899
North Grosvenordale, CT 06255

RE: **EM-VER-141-030317** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 61 Lowell Davis Road, Thompson, Connecticut.

Dear Mr. Williams:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting tentatively scheduled for March 25, 2003, at 1:30 p.m., in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut

Please call me or inform the Council if you have any questions or comments regarding this proposal.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/laf

Enclosure: Notice of Intent

c: John E. Mahon, Jr., Zoning Enforcement Officer, Town of Thompson

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ROBINSON & COLE LLP

KENNETH C. BALDWIN

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EM-VER-141-030317

March 17, 2003

Via Hand Delivery

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification
61 Lowell Davis Road
Thompson, Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless' ("Cellco") intends to modify its existing antenna configuration on the Charter Cable tower at 61 Lowell Davis Road in Thompson, Connecticut. Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j 72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Thompson First Selectman, Douglas J. Williams.

The existing tower, owned by Charter Cable, is located off Lowell Davis Road and is currently shared by Charter, Cingular Wireless and Cellco. Cellco's existing facility consists of four whip antennas attached to the tower at the 232.59-foot level and a single-story equipment shelter near the base of the tower. On November 7, 2002, the Council authorized Cellco to remove the four (4) whip antennas from the tower and install three (3) panel antennas at the 190-foot level and one (1) panel antenna at the 180-foot level on the tower. No changes were proposed to any ground mounted structures or equipment. (See EM-VER-141-021023 approval letter attached). As of the date of this filing this work has not been completed. Recently, Cellco decided to modify its Thompson installation further and now intends to relocate the array of three (3) panel antennas to the 237-foot level, and the single panel antenna to the 227-foot level.

The planned modifications to the Lowell Davis Road facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modification will not increase the overall height of the existing tower. Cellco's replacement antennas will be mounted at the 237-foot level and the 227-foot level on the existing 250-foot tower.

2. The modifications to Cellco's antenna configuration does not effect any ground level equipment or structure and therefore will not require an extension of facility boundaries.

3. The proposed antenna modification will not increase the noise levels at the facility by six decibels or more.

4. The operation of the panel antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. The worst-case power density calculation for Cellco's antennas will decrease slightly from 2.11% of the FCC standard for the existing whip antennas to 2.06% of the FCC standard for the panel antennas at the 237 and 227-foot levels. (see attached power density calculations tables).

Also attached is an engineer's certification that the tower can support Cellco's proposed antenna modification.

For the foregoing reasons, Cellco respectfully submits that the proposed modification of its antenna configuration at the Thompson facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Attachments
cc: Douglas J. Williams, Thompson First Selectman
Sandy M. Carter

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
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Web Site: www.state.ct.us/csc/index.htm

November 8, 2002

Kenneth C. Baldwin
Robinson & Cole
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-141-021023** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 61 Lowell Davis Road, Thompson, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on November 7, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, 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 October 23, 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 site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility 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: Honorable Douglas J. Williams, First Selectman, Town of Thompson
John E. Mahon, Jr., Zoning Enforcement Officer, Town of Thompson
Wendy Thomas, KGI
Michele G. Briggs, Southwestern Bell Mobile Systems

Site Name: Thompson , CT Existing
Tower Height: 232.59 ft rad center

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	880	9	200	1800	232.59	0.0120	0.56733	2.11%
							0.56733	0.00%

Total Percentage of Maximum Permissible Exposure

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case scenario, maximum values used.

General Power Density

Site Name: Thompson
Tower Height: Antenna CL - 237 Ft and 227 Ft.

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	880	8	200	1600	237	0.0102	0.56733	1.81%
Verizon	880	1	200	200	227	0.0014	0.56733	0.25%
Total Percentage of Maximum Permissible Exposure								**2.06%**

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Bergman & Associates, Inc.
Engineers

20 Washington Street
Haverhill, MA USA 01832-5524
Tel. (978) 372-1125
Fax (978) 372-1130

Esther McNany
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

Reference: **Structural Analysis - 250 ft Guyed Tower**
Charter Cable, Thompson, Connecticut
Proposed Four (4) Panel Array

Dear Esther: 6 March 03

In response to your request, Bergman & Associates Incorporated (BAI) has performed a structural analysis of the referenced tower. This analysis verified the tower's structural capacity to accommodate the proposed four (4)-panel antenna array and corresponding loads.

Summary

Results of this analysis indicate the tower mast, foundations and guys are capable of supporting the proposed panel antennas. The analysis and findings, which are based upon certain assumptions, are discussed in more detail herein.

Existing Conditions

This analysis was performed using information gathered from a limited field survey, and from both Verizon Wireless and L&W Engineering. Although a full tower inspection was beyond the scope of services, a previous ground-level field inspection was conducted to verify tower geometry, measure guy wire sizes, and locate appurtenances. Additionally, a recent instrument (transit) survey determined as-built, guy anchor locations.

The tower appears to be in good, overall condition. The lower 60 ft of the tower legs and bracing members appears to be straight and free of deleterious rust. The tower's red and white FAA paint scheme is in relatively good condition. No holes, in addition to the ones normally used for member connections, were observed.

The tower is a 250-foot, steel, guyed structure manufactured by Express Tower Company. The triangular mast consists of twelve (12) 20-foot, and one (1) 10-foot tall vertical sections. The tower is guyed at four points on the tower mast and three points on the ground. The guy wires are 3/8-inch at the 60-foot level, 7/16-inch at the 120-foot level, 1/2-inch at the 180-foot level, and 9/16-inch at the 240-foot level. Guy wires are assumed to be seven-wire, EHS steel strand. The tower is outfitted with torque arms at the 240-foot level. The triangular tower mast has a face dimension of 36 inches. The legs

are 2½" pipe sections with 50 ksi yield strength. The diagonal and horizontal members are 3/4" and 5/8" diameter solid rods, respectively, with 36 ksi yield strengths. The mast foundation is a 24-inch diameter concrete pier extending down to a 5.5-foot square by 1.33-foot thick pad approximately 4.5 feet below grade level (BGL). The three concrete guy anchors are 8 feet long by 3.25 feet square, situated horizontally approximately 9.5 feet BGL. Foundation information was based upon Express Tower drawings and was not field-verified.

BAI was unable to obtain the original geometry and member properties of the torque arms at 240 feet AGL. For analysis purposes, these properties were estimated based on experience and site photographs.

According to L&W Engineering reinforcing drawings, the horizontal members at each guy level, and the diagonal members at the 121.67-, 181.67-, 238.33-, 241.67-, and 244.17-foot levels have been reinforced. Our analysis assumes this reinforcement has been performed.

Presently, the tower supports the following communication equipment: (Elevations are relative to the tower base)

Existing Tower Appurtenance Schedule

Appurtenance	*Approx Centerline Elevation (ft)*	*Mount Location*
FAA Beacon	252	Top
(2) Celwave AO9210 Omni (1) 6' Mnt.*	232.59	A
(2) Celwave AO9210 Omni (1) 6' Mnt.*	232.59	B
(9) Allgon 7120.16.05.00 Panels	205	A, B, and C
(3) 12' Frames for Allgon Panels	205	A, B, and C
(1) Celwave PD1109 Omni & 6' Mnt.	205.21	A
(1) Celwave PCN9-2 Omni & 6' Mnt.	200	C
(1) Celwave PD1109 Omni & 6'Mnt.	190.21	B
(1) Celwave PD1109 Omni & 6' Mnt.	190.21	Face A-C
(1) Decibel DB254 Corner Reflector	172	B
(1) Celwave PD320 Open Dipole	160	B
(2) FAA Obstruction Lights	128	Face A-B
(1) 0.75m Channel Master Sat. Dish	75	B

* These antennas, mounts and the corresponding coax cables will be removed prior to the installation of the proposed Verizon Wireless panel antennas.

** For mount location reference, Leg A is closest to the access road. Legs B and C are clockwise relative to Leg A.

Analysis

We analyzed the existing tower based upon the addition of four (4) panel antennas, as described in the following schedule. Each of the three (3) RS panel antennas is fed with

three (3) 1 5/8" coax lines. The Decibel antenna is fed with one (1) 1 5/8" coax line. Our analysis assumes the ten (10) coax lines to be divided into bundled groups of three (3) and four (4), and mounted tight to the three (3) mast legs. See Figure 1 for proposed location of coax cables. *If the proposed antenna and coax cable information is not as stated herein, please inform us and we will adjust our analysis accordingly.*

Proposed Antenna Schedule

Antenna	*Approx Centerline Elevation (ft)*	*Mount Location*	*Total Area (sf) No Ice*
(3) RS90-12-00XA2	237	A, B, and C	24.00
(1) DB842H65	227	B	4.08

The tower was modeled and analyzed using TOWER v5.14, a three-dimensional, finite element analysis computer program written and distributed by Powerline Systems Inc specifically for the analysis and design of guyed and self-supporting steel lattice towers used in transmission and communication facilities. Loads representing the tower self-weight, wind, antennas, ice, and coax transmission lines were modeled and the resulting loads applied to the appropriate tower sections.

The loads were applied to the tower in accordance with the *ANSI/TIA/EIA Structural Standards for Steel Antenna Towers and Antenna Supporting Structures* (ANSI/TIA/EIA-222, Revision F, March 1996) guidelines. This is the accepted analysis and design standard for steel antenna towers and antenna supporting structures in the United States.

The tower was analyzed for two (2) load combinations in accordance with the TIA/EIA standard. The first load case was eighty-five (85) mph with no ice. The second load case was seventy-three (73.6) mph with a 1/2-inch of clear, 56 lb/cf radial ice. This wind velocity value reflects the TIA/EIA-allowed 25% wind load reduction for concurrent wind and ice loading. Each of these load combinations was applied in three directions: (1) perpendicular to the tower face, (2) into a tower apex, and (3) parallel to the tower face.

The tower was modeled as a three dimensional space frame with fully restrained connections between the mast and secondary bracing members. Guy cables were modeled as three dimensional cable elements with an initial pretension of 10% of their ultimate strength. Due to the non-linear behavior of guyed structures, or specifically, the change in load application with the change in tower geometry under applied load ("P-delta effect"), an iterative, non-linear analysis was used. The analysis was run until the deformed structure converged on results with an allowable (<2%) imbalance.

The mast legs and bracing members were checked in accordance with the *American Institute of Steel Construction* (AISC) specifications. In accordance with ANSI/TIA/EIA-222, Revision F, the allowable stress for structural steel tower members, except for the guy wires, was increased by 1/3 for all load combinations. A 2.0 safety factor was applied to the guy wire ultimate breaking strength.

Results

Based on the given information and on our analysis, the results are as follows:

1. Adding the proposed antennas and coax to the existing guyed tower will not overstress the tower members. A summary of the *maximum* loading per tower component is presented below. (These values *include* the allowed 1/3 increase in working stress.)

Tower Member Loading

Member	*Maximum Loading (%)*	*Elevation (ft)*
Leg	75.61	205.0
Horizontal	61.71	6.67
Diagonal	76.52	198.5

2. The existing foundation and guy anchorages can resist the proposed loads. A comparison of the design and proposed base and anchor reactions is presented below.

Base Foundation Reactions

Load	*Design Value (kips)*	*Proposed (kips)*
Downthrust	104.3	84.18
Shear	29.68	0.80

Guy Anchor Reactions

Load	*Design Value (kips)*	*Proposed (kips)*
Uplift	37.97	31.26
Shear	63.6	37.15

3. The maximum guy wire stress levels for all load cases are summarized below: (Values above 100% indicate overstress)

Guy Wire Stress Summary

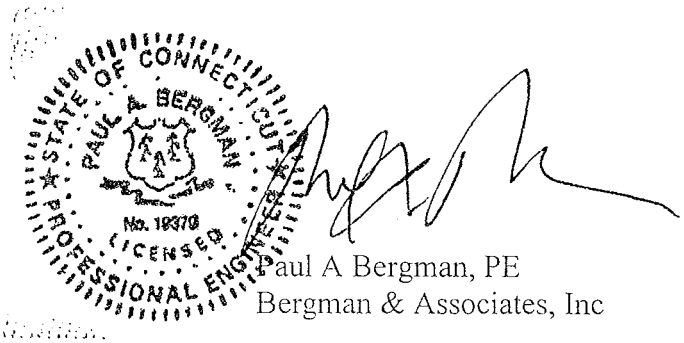
Level	*Elevation (ft)*	*Efficiency (%)*
1	60	76.32
2	120	97.26
3	180	99.47
4	240	62.30

Conclusion

Our analysis finds that the tower and foundations can accommodate the additional loading induced into the structure by the proposed Verizon Wireless antennas and coaxial transmission lines.

Our analysis is based upon certain assumptions, including the bundling of the proposed coax lines. The arrangement of these coax lines has a direct affect on the performance of the tower structure, and it is important that they be correctly positioned on the tower during construction. Following construction, this office should be notified to inspect the work for compliance with this report.

Sincerely yours,



Hung D Nguyen
Bergman & Associates, Inc

Paul A Bergman, PE
Bergman & Associates, Inc

Attached: Coax Cable Arrangement.

cc: file

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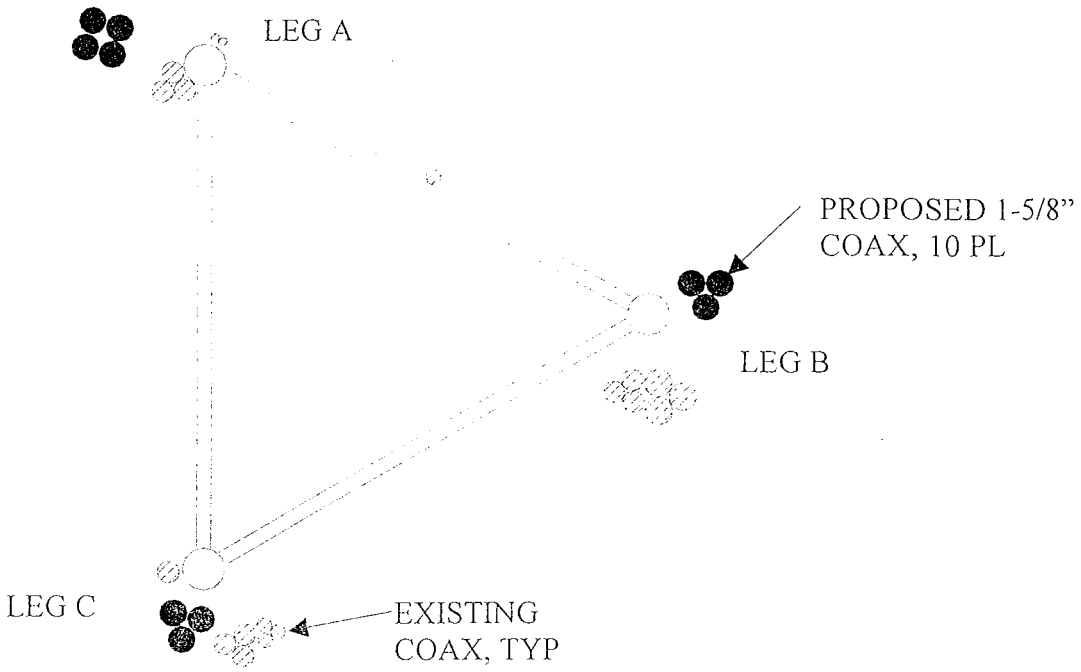

Figure 1: COAX CABLE ARRANGEMENT