EM-NEXTEL-015-051003

NOTICE OF INTENT TO MODIFY AN EXISTING TELECOMMUNICATIONS FACILITY AT 1875 NOBLE AVENUE, BRIDGEPORT, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. seq. ("PUESA"), and Sections 16-50j-72(b) of the Regulations of Connecticut State Agencies adopted pursuant to the PUESA, General Dynamics Network Services, Inc. as agent for Nextel of New York, Inc. d/b/a Nextel Communications ("Nextel") hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 1875 Noble Avenue, Bridgeport, Connecticut (the "Beardsley Zoo Facility"), owned by Omnipoint. ("T-Mobile"). Nextel has entered into an agreement with the owner of the Facility to permit the installation of a wireless communications facility at the approved Beardsley Zoo Facility. T-Mobile and New Cingular Wireless (formerly AT&T Wireless) currently share the use of the Beardsley Zoo Facility, as detailed below.

The Beardsley Zoo Facility

The Beardsley Zoo Facility consists of an approximately one hundred twenty (120) foot flagpole and associated equipment currently being used for wireless communications by T-Mobile and New Cingular Wireless. The facility was approved by the City of Bridgeport as a stealth flagpole tower designed for co-location by four (4) wireless providers. T-Mobile's antennas are located in the top two slots at antenna centerline heights of approximately 117'-6" and 107' above grade level. Cingular's antennas are located at an antenna centerline height of approximately 98' above grade level. A chain link fence surrounds the associated equipment compound.

Nextel's Wireless Facility

As shown on the Lease Exhibits annexed hereto as Exhibit C, dated September 19, 2005, prepared by Tectonic Engineering & Surveying Consultants P.C., including a site detail plan and elevation plan of the Beardsley Zoo Facility, Nextel proposes shared use of the Facility by placing antennas within the existing flagpole and an equipment shelter at grade within the existing compound. Nextel will install three (3) panel antennas at a centerline height of approximately 89'-6" and three (3) panel antennas at a centerline height of approximately 84'-6". Nextel's proposed 12' by 20' unmanned equipment shelter will be located within the existing fenced compound at the base of the flagpole. As evidenced in the structural report, dated August 24, 2005, prepared by GPD Associates, annexed hereto as Exhibit A, Nextel has confirmed that the flagpole is structurally capable of supporting the addition of Nextel's antennas.

Nextel's Facility Constitutes An Exempt Modification

The proposed addition of Nextel's antennas and equipment to the Beardsley Zoo Facility constitutes an exempt "modification" of an existing facility as defined in Connecticut General Statutes Section 16-50i(d) and Council regulations promulgated

~ ORIGINAL ~

pursuant thereto. The addition of Nextel's antennas and equipment to the flagpole will not result in an increase of the flagpole's height nor extend the site boundaries. Further, there will be no increase in noise levels by six (6) decibels or more at the site's boundary. No changes to the appearance of the flagpole are proposed as Nextel's antennas will be internally mounted in the same manner as the existing antennas. Nextel's equipment shelter will be located within the existing fenced and landscaped compound. As such, Nextel's facility will have a *de minimis*, if any, visual impact.

As set forth in a Cumulative Emissions Report prepared by Daniel J. Collins, RF Engineer, annexed hereto as Exhibit B, the total radio frequency electromagnetic radiation power density at the site's boundary will not be increased to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission.

For all the foregoing reasons, addition of Nextel's facility to the flagpole constitutes an exempt modification which will not have a substantially adverse environmental effect.

Conclusion

Accordingly, Nextel respectfully requests that the Connecticut Siting Council acknowledge that its proposed modification to the Beardsley Zoo Facility meets the Council's exemption criteria.

Respectfully Submitted,

Lucia Chiocchio

Lucia Chiocchio, Esq.
On behalf of Nextel of New York
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601

cc: Mayor John Michael Fabrizi, City of Bridgeport
Melanie Howlett, Esq., City Attorney
Mark Nidle, General Dynamics (w/o attachments)
Tara Basley, General Dynamics

FLAG POLE

STRUCTURAL ANALYSIS REPORT

CT11240B BRIDGEPORT/RT. 8
Bridgeport, Connecticut
Project 2005192.53

New Antenna Installation
Existing 120 ft. Flag Pole

For:
T-Mobile USA
Bellevue, Washington

Prepared By:

David B. Granger, P.E.
Registered Professional Engineer
Connecticut # 17557

August 24, 2005

GPD ASSOCIATES ENGINEERS • ARCHITECTS • PLANNERS
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EXECUTIVE SUMMARY

The purpose of this analysis was to verify whether the design for the existing tower is structurally capable of carrying the new antenna and coax loads as specified by T-Mobile, USA. This report was commissioned by Ms. Jennifer Shearer of T-Mobile.

The design for the existing structure is structurally satisfactory for the proposed loading configuration. The foundation reactions, with the proposed loading, were found to be less than the original design reactions. Therefore, it is our opinion that the design for the existing foundation will be adequate, if it was properly designed for the original tower reactions, and constructed accordingly.

Section Results

Monopole	% Capacity	Result
112′ – 120′	8.0%	Pass
102′ – 112′	27.7%	Pass
92′ – 102′	57.9%	Pass
82′ – 92′	97.5%	Pass
60′ – 82′	23.3%	Pass
30′ – 60′	47.9%	Pass
0′ – 30′	79.0%	Pass
Foundation	**% Original Reactions**	**Result**
Tower Base	96.1%	Pass
Tower Rating: 97.5%		

TOWER DESCRIPTION

The existing tower is located in Bridgeport, Connecticut. The 120' flag pole was originally designed for Omnipoint by PiRod, Inc. of Plymouth, Indiana. The original design load for the tower was for a 85 mph basic wind speed with 1/2″ radial ice in accordance with TIA/EIA-222-F. The tower was originally designed to hold the following:

Original Configuration

Antennas:	
Elev. 116′	(3) Panel Antennas inside fiberglass shroud w/ internal coax
Elev. 107′	(3) Panel Antennas inside fiberglass shroud w/ internal coax
Elev. 97′	(3) Panel Antennas inside fiberglass shroud w/ internal coax
Elev. 87′	(3) Panel Antennas inside fiberglass shroud w/ internal coax

The existing monopole has seven major sections. The bottom three sections are made of a 24″ x 3/8″ pipe, and are connected with flange connections. The top four sections are made up of a 6-3/4″ x 3/4″ pipe, with a 24″ fiberglass shroud and are connected with flange connections. The tower was designed such that the antennas were to be mounted behind the fiberglass shroud in order to shield them from sight and wind. The structure is galvanized and has no tower lighting.

All structural information was provided by T-Mobile in the form of the original tower drawings by PiRod (Eng. File #: A-116835, dated June 1, 2000). The existing, reserved, and proposed antenna information was provided by T-Mobile USA. This analysis and report are based solely on this information.

TOWER MATERIALS

Data on steel strength was available from the information provided. The following table details the steel strength used in the analysis.

Monopole Sections	ASTM A53 (42 KSI Yield Strength)
Antenna Mount Sections	ASTM A53 (42 KSI Yield Strength)

TOWER LOADING

The following data shows the major loading that the tower supports. The existing, reserved, and proposed antenna information was provided by T-Mobile USA.

Existing and Reserved Configuration

Elevation	Carrier	Antennas
117.5′	T-Mobile	(3) EMS FR65-17-04DP Antennas & (6) LNA Amplifiers inside fiberglass shroud w/ (12) 1-5/8″ coax
107′	T-Mobile	(3) EMS FR65-17-04DP Antennas & (6) LNA Amplifiers inside fiberglass shroud w/ (12) 1-5/8″ coax
98′	AT&T	(3) Huber & Suhner 1319.41.0079 Antennas inside fiberglass shroud w/ (6) 1-1/4″ coax

Proposed Configuration

Elevation	Carrier	Antennas
117.5′	T-Mobile	(3) EMS FR65-17-04DP Antennas & (6) LNA Amplifiers inside fiberglass shroud w/ (12) 1-5/8″ coax
107′	T-Mobile	(3) EMS FR65-17-04DP Antennas & (6) LNA Amplifiers inside fiberglass shroud w/ (12) 1-5/8″ coax
98′	AT&T	(3) Huber & Suhner 1319.41.0079 Antennas inside fiberglass shroud w/ (6) 1-1/4″ coax
89.5′	**Nextel**	**(3) EMS RV65-12-XXBL Antennas inside fiberglass shroud w/ (9) 7/8″ coax**
84.5′	**Nextel**	**(3) EMS RV65-12-XXBL Antennas inside fiberglass shroud w/ (6) 7/8″ coax**

Note: BOLD type indicates a new appurtenance.

The purpose of this independent structural analysis review is to determine if the design for the existing tower, with the proposed configuration, is in conformance to the latest EIA/TIA 222-F standard requirements.

ANALYSIS

The purpose of this structural analysis review is to determine if the design for the existing tower is in conformance to the latest TIA/EIA-222-F standard requirements. ERI Tower (Version v3.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate member stresses for various dead, live, wind, and ice load cases. All loads were computed in accordance with the ANSI/EIA/TIA-222-F and all local building code requirements. Selected output from the analysis is included in Appendix 1.

The current requirements of TIA/EIA-222-F and Connecticut Building Code are for a basic wind speed of 85 mph with 1/2" of radial ice. A 25% reduction in wind load is allowed when wind and ice are applied simultaneously. TIA/EIA-222-F requires towers within Fairfield County be analyzed with an 85 mph wind speed. Connecticut Building Code requires all structures within Fairfield County to be analyzed with an 85 mph basic wind speed. In accordance with TIA/EIA-222-F annex F, the analysis of existing structures should be with the latest edition of the standard and all local/state restrictions.

ANALYSIS BASIC WIND SPEED: 85 MPH

The tower and foundations are assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects.

CONCLUSIONS AND RECOMMENDATIONS

Based on the computer structural analysis results, the design for the existing 120' flag pole does meet the requirements of TIA/EIA-222-F standards for a basic wind speed of 85 mph with 1/2" of radial ice for the proposed antenna configuration.

The foundation reactions, with the proposed loading, were found to be less than the original design reactions. Therefore, it is our opinion that the design for the existing foundation will be adequate, if it was properly designed for the original tower reactions, and constructed accordingly.

Summary of Findings

Monopole	Satisfactory
Foundation	Adequate

Therefore, based on our analysis results, the design for the existing structure is structurally satisfactory for the proposed loading configuration.

DISCLAIMER OF WARRANTIES

The engineering services rendered by GPD ASSOCIATES in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. GPD ASSOCIATES does not analyze the fabrication, including welding, except as included in this report.

The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD ASSOCIATES, but are beyond the scope of this report.

GPD ASSOCIATES makes no warranties, expressed or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD ASSOCIATES will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD ASSOCIATES pursuant to this report will be limited to the total fee received for preparation of this report.

Pinnacle Telecom Group
Consulting and Engineering Services

Antenna Site FCC RF Compliance Assessment and Report

Nextel Communications

Site "CT-2922 – Bridgeport Reservoir"
1875 Noble Avenue
Bridgeport, CT

September 29, 2005

14 Ridgedale Avenue, Suite 262 • Cedar Knolls, NJ 07927 • 973-451-1630

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Introduction and Summary

At the request of Nextel Communications, Pinnacle Telecom Group has prepared this independent expert assessment of potential radiofrequency (RF) exposure and FCC regulatory compliance related to a proposed wireless base station operation on an existing "flagpole-style" monopole structure at 1875 Noble Avenue in Bridgeport, CT. Nextel refers to the site as "CT-2922 – Bridgeport Reservoir", and proposes to operate directional panel antennas in support of the provision of wireless communications services.

The FCC requires all wireless system operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with specified FCC Maximum Permissible Exposure (MPE) limits in areas of general public access.

In this case, according to information provided by Nextel, there are two existing antenna operations – by T-Mobile (also known as Omnipoint Communications) and Cingular Wireless (which recently acquired AT&T Wireless) – that will need to be included in this compliance assessment. Note that FCC regulations require any future antenna collocators to specifically assess and assure continuing compliance based on the effects of all proposed and then-existing antennas.

The compliance assessment employs a mathematical analysis of potential RF exposure levels that the combination of proposed and existing antenna operations will cause at ground level around the site. The analysis employs standard FCC formulas for predicting the effects of the antennas in a very conservative manner, with a mathematical model and operational assumptions designed to intentionally and significantly overstate the calculated results versus the RF levels that will actually be caused by the antennas. The FCC encourages this approach, and when such a conservative analysis demonstrates the RF levels will be below the FCC MPE limit, there can be great confidence in the conclusions about compliance with the safety limit.

The result of the compliance assessment in this case is as follows:

- At ground level around the site, the conservatively calculated maximum RF exposure level from the combination of proposed and existing antenna operations will be only 2.3319 percent of the FCC limit for acceptable continuous exposure of the general population; in other words, even with a very conservative methodology and operational assumptions designed to overstate the worst-case potential RF exposure, the result in this case is still more than 42 times below the FCC compliance limit.
- Therefore, the calculation results demonstrate that the potential RF exposure from the combination of proposed and existing antenna operations will comfortably satisfy the compliance obligations in the FCC regulations regarding continuous human exposure to RF fields. Moreover, because of the conservative methodology and assumptions applied in the calculations, actual RF levels caused by the antennas will be even less significant than the calculations here indicate.

The remainder of this report provides the following:

- technical data on the proposed and existing antenna operations;
- a description of the applicable FCC mathematical model for determining RF compliance, and application of the relevant data to that model; and
- analysis of the results, and a compliance conclusion for the antenna site.

In addition, three Appendices are included. Appendix A provides background on the FCC limits for RF exposure, along with a list of references. Appendix B provides a copy of the FCC's official position on the potential exposure from cellular and PCS transmitters, to wit, that it is insignificantly low and has no effect on the human health environment. Finally, Appendix C summarizes the qualifications of the expert certifying RF compliance for this site.

ANTENNA AND TRANSMISSION DATA

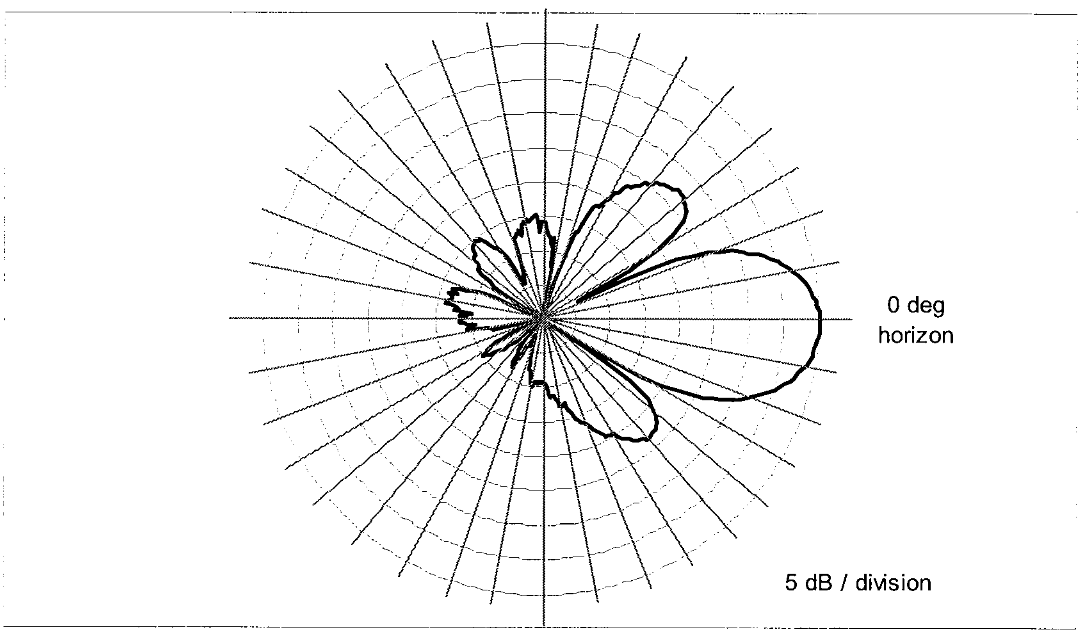
Compliance-related data for the proposed Nextel antenna operation at the site is summarized in the table on the next page.

Nextel Data	
Transmit Frequency Band	851-869 MHz and 935-940 MHz
Service Coverage Type	Sectorized (3 sectors – two sets of antennas stacked vertically – with identical compliance-related parameters, except for mounting height, as described below)
Antenna Centerline Height (AGL)	Upper Stack: 89 ft. 6 in. Lower Stack: 84 ft. 6 in.
Antenna Type	Directional Panel
Antenna Manufacturer	EMS Wireless
Antenna Model / Max. Gain	RV65-12-XXBL / 12.3 dBd (14.4 dBi)
RF Channels per Sector	20 in each band (max.; see note below)
Max. ERP / RF Chan.	100 watts (max.; see note below)

Note that Nextel's service coverage is optimized when the maximum effective radiated power (ERP, the product of transmitter power and maximum antenna gain, offset by antenna line loss) is set at 100 watts per channel. (Given the antenna gain, the equivalent net antenna input power per channel is approximately five watts.) Note, too, that Nextel's technology allows a maximum of 36 RF channels for each base station (divided among the antenna sectors). While the typical "maximum RF channels per sector" figure in each frequency band is 12 (36 divided by three), the equipment is technically capable of as many as 20 RF channels in a single sector (subject to the overall limit of 36). In order to be as conservative as possible, our compliance calculations will apply the technical maximum of 20 channels in each band.

The area below the antennas, at ground level around a site, is of interest in terms of potential exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations. Toward that end, antenna pattern data for the calculations is taken from the manufacturer's specifications, and a diagram of the pattern is shown on the next page. In these types of antenna radiation pattern diagrams, the antenna is effectively pointed at the three o'clock position (the horizon) and the relative strength of the pattern at different angles is described using decibel units. Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only 1/1000th of the maximum.

EMS RV65-12-XXBL – Vertical-Plane Radiation Pattern



As mentioned earlier, there are existing antenna operations that need to be included in the compliance assessment. Both T-Mobile and Cingular are commercial wireless carriers, using directional panel antennas arranged for sectorized service coverage.

T-Mobile (also known as Omnipoint Communications) operates in the 1900 MHz "PCS" frequency band, and its antennas (EMS FR-65-17-04DP) are mounted in two vertical stacks at the top of the 120-foot flagpole (at 107 feet and 117 feet, 6 inches). T-Mobile operates with a maximum of eight RF channels per antenna sector and a maximum of 20 watts of transmitter power per RF channel.

Cingular's antennas (Huber & Suhner model 1319.41.0079) are at 98 feet, and as Cingular holds FCC licenses to transmit in both the 800 MHz "cellular" and 1900 MHz "PCS" frequency bands, we will conservatively incorporate an assumption of dual-band operation here. (Operators licensed for dual-band operation can be expected to maximize their investment in spectrum at each site.) In the 800 MHz band (specifically, 869 MHz), Cingular uses a maximum of nine RF channels per antenna sector and 20 watts of transmitter power per channel. In the 1900 MHz band, Cingular uses three RF channels per sector and 16 watts of transmitter power per channel.

Mathematical Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65"; see list of references in Appendix B) provides guidelines for computational models and their application to calculating potential exposure levels at various points around wireless transmitting antennas. The computational models are intentionally very conservative, and significantly overestimate the potential exposure levels, and additional assumptions can be incorporated to make the calculations even more conservative. Thus, if the calculations demonstrate the MPE limits are still not exceeded even under extreme worst-case assumptions, there can be great confidence that no RF health hazard exists.

Potential exposure levels at ground level around an antenna site have a direct relationship to input power to the antenna (which we will assume is constant and at its maximum), effective antenna gain in the direction of interest, and an assumed ground reflection factor (assumed to be a conservative 100 percent). The levels are inversely proportional to the square of the distance from the antenna. Thus, in order to be conservative, calculations will be performed from the bottom of the antennas and at street level will assume a human height of 6 feet, 6 inches – conservatively minimizing the distance to the RF source.

Note that the FCC recognizes that with sectorized antenna coverage, the radiated power of interest is the maximum per individual antenna sector. The exposure contributions of same-system sectors pointing in other directions are insignificantly low, due to the directionality of the antennas.

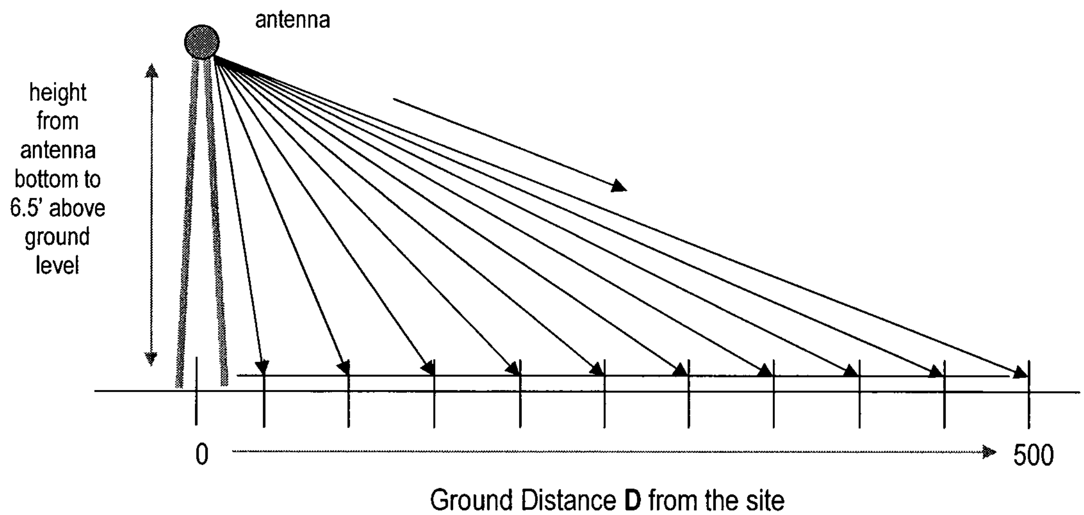
The FCC's formula for ground-level RF exposure calculations is as follows:

$$MPE\% = (100 * ERP_{ch} * 1.64 * N * 10^{(Vdisc/10)} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the FCC limit for acceptable continuous exposure of the general public
100	=	factor to convert raw result to percentage form
ERP_{ch}	=	maximum effective radiated power per RF channel, expressed in milliwatts, and a function of transmitter power, line loss, and maximum antenna gain (referenced to a unity-gain dipole)
1.64	=	factor to convert dipole reference in ERP to an isotropic (absolute) reference
N	=	maximum number of RF channels per sector
$10^{(Vdisc/10)}$	=	numeric equivalent of the relative antenna discrimination in the downward direction of interest, referenced to any applicable antenna mechanical downtilt angle
4	=	the factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters (1 foot = 30.48 centimeters)

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters) off the ground, representing the FCC-recommended figure for human standing height, as illustrated in the diagram on the next page.



It is generally understood that the farther away one is from an antenna, the lower the RF level, but that is true when distance is the primary factor controlling RF level. At distances fairly close to the site, the MPE% calculations reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled, and as a result the RF levels generally decrease with increasing distance.

In order to assess FCC compliance for a multi-operator site, at each distance point along the ground an MPE% calculation is made for each antenna operation (including the use of multiple frequency bands by one operator). Compliance is then determined by comparing the sum of the individual results (which we call "total MPE%") at each distance point with 100 percent, with the latter figure serving as the normalized reference for the FCC limit. Any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represent non-compliance. Results below 100 percent indicate compliance with the federal regulations on controlling exposure.

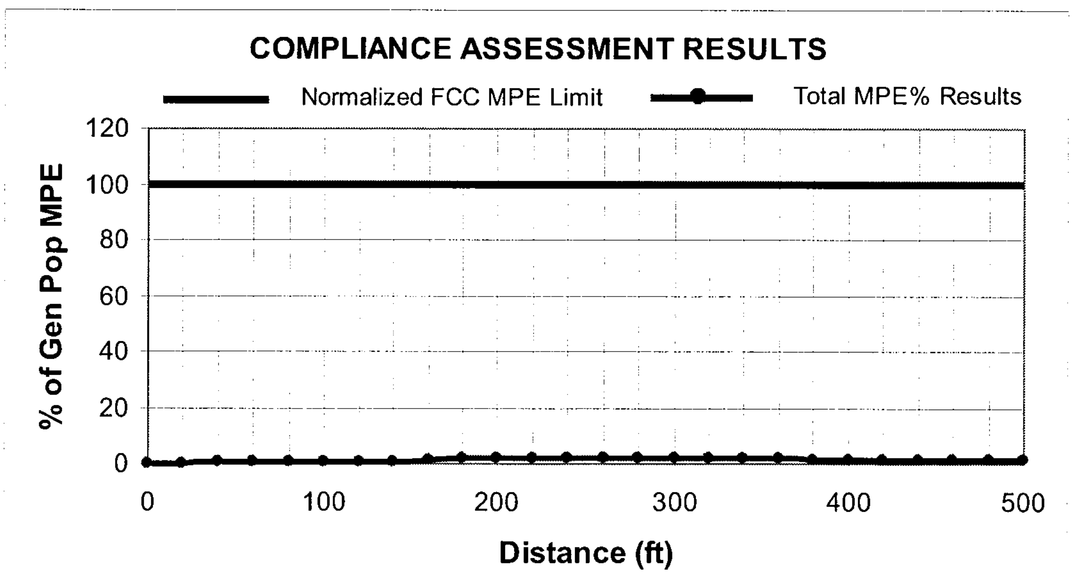
Note that the following conservative methodology and assumptions are incorporated on a general basis into the calculations:

1. The antennas are assumed to be operating continuously at maximum power.
2. For both T-Mobile and Cingular, the power-attenuation effects of the antenna cabling ("antenna line loss") will be ignored. (Line loss is automatically built into the 100-watt per-channel ERP figure for Nextel's operation.)
3. The directional panel antennas are all hypothetically assumed to be pointed directly overhead all points of interest at street, ignoring the effects of antenna discrimination in the horizontal plane.
4. The calculations also intentionally minimize the distance factor by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of the antenna.
5. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the ground itself.

The table on the next page provides the results of the MPE% calculations for each operator as well as the "total MPE%" effect, highlighting the overall worst-case (maximum) calculated result in bold. Note that the calculations for both Nextel and T-Mobile conservatively applied the lower of the two antenna heights, respectively, and that the results listed in the table for Cingular reflect the overall effects of the parameters associated with dual-band operation.

As indicated in bold in the last column of the table, the overall highest calculated result is only 2.3319 percent of the FCC limit, a result that particularly with the considerable conservatism in the calculations, demonstrates clear compliance with the FCC limit. A graph of the calculation results, presented on the next page below the table, provides a clearer visual illustration of the relative insignificance of the RF levels. The line representing calculation results only barely rises above the graph's zero baseline, and shows a clear and consistent margin to the FCC compliance limit.

Ground Distance (ft)	Nextel 851 MPE%	Nextel 935 MPE%	T-Mobile MPE%	Cingular MPE%	Total MPE%
0	0.0282	0.0257	0.1031	0.0396	0.1967
20	0.0605	0.0550	0.0991	0.0377	0.2523
40	0.2155	0.1962	0.0705	0.0298	0.5120
60	0.3788	0.3447	0.0415	0.0588	0.8238
80	0.3048	0.2774	0.0344	0.0828	0.6995
100	0.1099	0.1000	0.0933	0.0662	0.3694
120	0.0010	0.0009	0.0541	0.3410	0.3970
140	0.1299	0.1183	0.0446	0.2768	0.5696
160	0.3321	0.3023	0.0370	0.4578	1.1292
180	0.6108	0.5560	0.1830	0.3807	1.7305
200	0.8259	0.7517	0.1551	0.3205	2.0532
220	1.0085	0.9179	0.1328	0.2728	**2.3319**
240	1.0126	0.9217	0.1147	0.2345	2.2835
260	1.0040	0.9138	0.0999	0.2035	2.2213
280	1.0048	0.9145	0.0877	0.1781	2.1850
300	0.9907	0.9017	0.0775	0.1570	2.1269
320	0.9841	0.8957	0.0689	0.1394	2.0880
340	0.9616	0.8752	0.0617	0.0505	1.9490
360	0.9673	0.8804	0.0555	0.0241	1.9273
380	0.8719	0.7936	0.0010	0.0218	1.6883
400	0.8660	0.7882	0.0104	0.0183	1.6830
420	0.7880	0.7172	0.0095	0.0167	1.5315
440	0.7715	0.7022	0.0316	0.0318	1.5371
460	0.7076	0.6440	0.0291	0.0292	1.4100
480	0.6820	0.6207	0.0476	0.0615	1.4118
500	0.6297	0.5731	0.0441	0.0568	1.3037



Compliance Conclusion

In this case, the conservatively calculated maximum potential exposure level from the combination of proposed and existing antenna operations is only 2.3319 percent of the FCC limit considered completely acceptable for continuous human exposure to RF fields.

In other words, even with all the conservatism in the mathematical model and operational assumptions applied here, this calculated worst-case result is still more than 42 times below the FCC limit.

The results of these calculations, therefore, provide a clear demonstration that the RF emissions and exposure levels from the combination of proposed and existing antennas at this site will be in full compliance with the Federal regulations and limits regarding the control of human exposure to RF fields.

Moreover, because of the conservatism in the FCC mathematical model and our calculations, the RF levels that will actually be caused by the antennas will be significantly lower than the calculations here indicate.

Certification

It is the policy and practice of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer, who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF exposure levels and assessment of regulatory compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the potential RF exposure levels at the subject site are in full compliance with the FCC regulations concerning RF exposure.

Daniel J. Collins
Chief Technical Officer

9/29/05
Date

Appendix A: The FCC RF Exposure Limits

Background

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

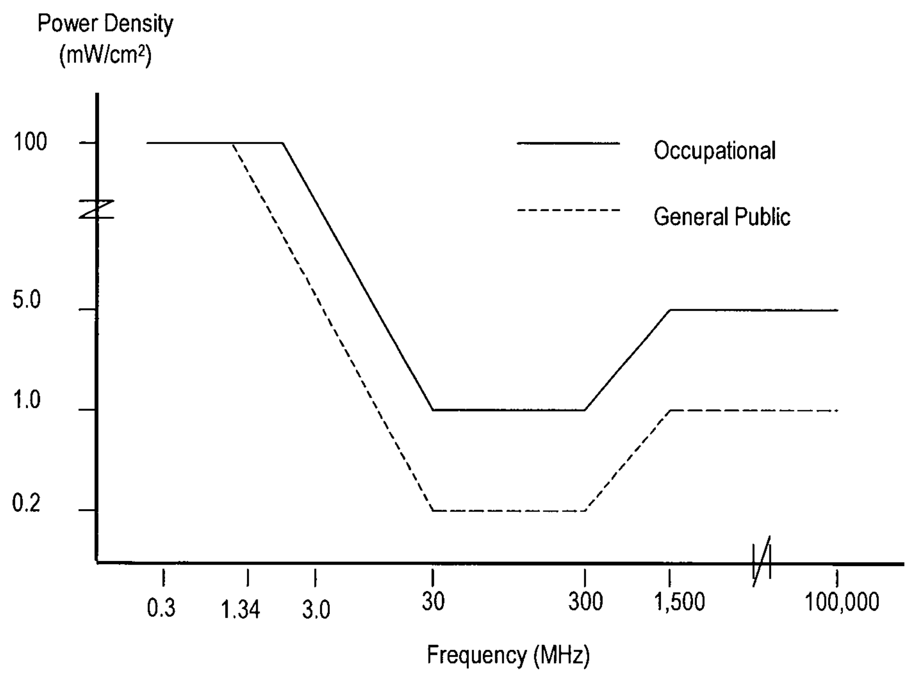
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	180 / F^2
3.0 - 30	900 / F^2	180 / F^2
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

References

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

47 CFR, FCC Rules and Regulations, Part 22 (Public Mobile Services).

47 CFR, FCC Rules and Regulations, Part 24 (Personal Communications Services).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

Appendix B: FCC Position on Cellular and PCS Transmitters

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF ENGINEERING & TECHNOLOGY
WASHINGTON, D.C. 20554

January 1998

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INFORMATION ON HUMAN EXPOSURE TO RADIOFREQUENCY FIELDS FROM CELLULAR AND PCS RADIO TRANSMITTERS

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(1) Cellular and PCS base stations

Radio frequencies constitute part of the overall electromagnetic spectrum. Cellular communications systems use frequencies in the 800-900 megahertz (MHz) portion of the radiofrequency (RF) spectrum (frequencies formerly used for UHF-TV broadcasting), and transmitters in the Personal Communications Service (PCS) use frequencies in the range of 1850-1990 MHz. Primary antennas for cellular and PCS transmissions are usually located on towers, water tanks and other elevated structures including rooftops and the sides of buildings. The combination of antennas and associated electronic equipment is referred to as a cellular or PCS base station" or "cell site." Typical heights for base station towers or structures are 50-200 feet. A typical cellular base station may utilize several "omni-directional" antennas that look like poles or whips, 10 to 15 feet in length. PCS (and also many cellular) base stations use a number of "sector" antennas that look like rectangular panels. The dimensions of a sector antenna are typically 1 foot by 4 feet. Antennas are usually arranged in three groups of three with one antenna in each group used to transmit signals to mobile units (car phones or hand-held phones). The other two antennas in each group are used to receive signals from mobile units.

The Federal Communications Commission (FCC) authorizes cellular and PCS carriers in various service areas around the country. At a cell site, the total RF power that could be transmitted from each transmitting antenna at a cell site depends on the number of radio channels (transmitters) that have been authorized and the power of each transmitter. Typically, for a cellular base station, a maximum of 21 channels per sector (depending on the system) could be used. Thus, for a typical cell site utilizing sector antennas, each of the three transmitting antennas could be connected to up to 21 transmitters for a total of 63 transmitters per site. When omni-directional antennas are used, up to 96 transmitters could be implemented at a cell site, but this would be very unusual. While a typical base station could have as many as 63 transmitters, not all of the transmitters would be expected to operate simultaneously thus reducing overall emission levels. For the case of PCS base stations, fewer transmitters are normally required due to the relatively greater number of base stations.

Although the FCC permits an **effective radiated power** (ERP) of up to 500 watts per channel (depending on the tower height), the majority of cellular base stations in urban and suburban areas operate at an ERP of 100 watts per channel or less. An ERP of 100 watts corresponds to an **actual** radiated power of 5-10 watts, depending on the type of antenna used (ERP is not equivalent to the power that is radiated but is a measure of the directional characteristics of the antenna). As the capacity of a system is expanded by dividing cells, i.e., adding additional base stations, lower ERPs are normally used. In urban areas, an ERP of 10 watts per channel (corresponding to a radiated power of 0.5 - 1 watt) or less is commonly used. For PCS base stations, even lower radiated power levels are normally used. The signal from a cellular or PCS base station antenna is essentially directed toward the horizon in a relatively narrow beam in the vertical plane. For example, the radiation pattern for an omni-directional antenna might be compared to a thin doughnut or pancake centered around the antenna while the pattern for a sector antenna is fan-shaped, like a wedge cut from a pie. As with all forms of electromagnetic energy, the power density from a cellular or PCS transmitter decreases rapidly (according to an inverse square law) as one moves away from the antenna. Consequently, normal ground-level exposure is much less than exposures that might be encountered if one were very close to the antenna and in its main transmitted beam. Measurements made near typical cellular and PCS installations have shown that ground-level power densities are well below limits recommended by RF/microwave safety standards.

In 1996, the FCC adopted updated guidelines for evaluating human exposure to radiofrequency (RF) fields from fixed transmitting antennas such as those used for cellular radio and PCS base stations.1 The new guidelines for cellular and PCS base stations are identical to those recommended by the National Council on Radiation Protection and Measurements (NCRP).2 These guidelines are also similar to the 1992 guidelines recommended by the American National Standards Institute and the Institute of Electrical and Electronics Engineers (ANSI/IEEE C95.1-1992).3 The FCC adopted guidelines for hand-held RF devices, such as cellular and PCS phones, that are the same as those recommended by the ANSI/IEEE and NCRP guidelines (see later discussion).

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1 FCC *Report and Order* in ET Docket 93-62, 61 Federal Register 41006 (August 7, 1996); 11 FCC Record 15123 (1997). See also, FCC *Second Memorandum Opinion and Order*, ET Docket 93-62, 62 Federal Register 47960 (September 12, 1997), 12 FCC Record 13494 (1997). For more information on these documents contact the FCC's toll-free number: 1-888-CALL FCC (1-888-225-5322). They may also be viewed and downloaded at the FCC's Office of Engineering and Technology World Wide Web Site under the "RF Safety" heading at the following address: www.fcc.gov/oet/rfsafety. The FCC's RF exposure guidelines are based on recommendations made to the FCC by U.S. federal safety and health agencies such as the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA).

2 The NCRP is a non-profit corporation chartered by congress to develop information and recommendations concerning radiation protection.

3 The American National Standards Institute is a non-profit, privately-funded, membership organization that coordinates development of voluntary national standards in the United States. The IEEE is a non-profit technical and professional engineering society.

In the case of cellular base station transmitters, at a frequency of 869 MHz (the lowest frequency used), the FCC's RF exposure guidelines recommend a maximum permissible exposure level of the general public (or exposure in "uncontrolled" environments) of about 580 microwatts per square centimeter ($\mu W/cm^2$), as averaged over any thirty-minute period. This limit is many times greater than RF levels typical found near the base of typical cellular towers or in the vicinity of other, lower-powered cellular base station transmitters. For example, measurement data obtained from various sources have consistently indicated that "worst-case" ground-level power densities near typical cellular towers are on the order of 1 $\mu W/cm^2$ or less (usually significantly less). Calculations corresponding to a "worst-case" situation (all transmitters operating simultaneously and continuously at the maximum licensed power) show that in order to be exposed to levels near the FCC's limits for cellular frequencies, an individual would essentially have to remain in the main transmitting beam (at the height of the antenna) and within a few feet from the antenna. This makes it extremely unlikely that a member of the general public could be exposed to RF levels in excess of these guidelines from cellular base station transmitters.

For PCS base station transmitters, the same type of analysis holds, except that at the PCS transmitting frequencies (1850-1990 MHz) the FCC's exposure limits for the public are 1000 $\mu W/cm^2$. Therefore, there would typically be an even greater margin of safety between actual public exposure levels and the recognized safety limit.

When cellular and PCS antennas are mounted at rooftop locations it is possible that RF levels greater than 1 $\mu W/cm^2$ could be present on the rooftop itself. This might become an issue if the rooftop were accessible to maintenance personnel or others. However, exposures approaching or exceeding the safety guidelines are only likely to be encountered very close to and directly in front of the antennas. Even if RF levels were to be higher than desirable on a rooftop, appropriate restrictions could be placed on access. Factoring in the time-averaging aspects of safety standards could also be used to reduce potential exposure. The fact that rooftop cellular and PCS antennas usually operate at lower power levels than antennas on freestanding towers makes excessive exposure conditions on rooftops even less likely. This reason and the significant signal attenuation of a building's roof also minimizes any chance for harmful exposure of persons living or working within the building itself.

(2) Mobile (vehicle-mounted) antennas

Vehicle-mounted antennas used for cellular communications normally operate at a power level of 3 watts or less. These cellular antennas are typically mounted on the roof, on the trunk, or on the rear window of a car or truck. Studies have shown that in order to be exposed to RF levels that approach the safety guidelines it would be necessary to remain very close to a vehicle-mounted cellular antenna. For example, a study done for AT&T Bell Laboratories by the University of Washington documented typical and "worst-case" exposure levels and specific absorption rates (SAR) for vehicle occupants and persons standing close to vehicle-mounted cellular antennas. Worst-case exposure conditions were considered when an individual was at the closest possible distance from the antenna. Several configurations were tested using adult and child "phantom" models.

The results of this study showed that the highest exposure (1900 $\mu W/cm^2$) occurred with a female model at a distance of 9.7 cm (3.8 inches) from one of the antennas operating at a power level of 3 watts. Although this level is nominally in excess of the FCC's exposure limits for power density at this frequency, analysis of the data indicated that the antenna would have to be driven to 7 W of power before the limit for *specific absorption rate* (SAR) allowed by the FCC guidelines would be exceeded. The intermittent nature of transmission and the improbability that a person would remain so close to the antenna for any length of time further reduces the potential for excessive exposure.

The University of Washington study also indicated that vehicle occupants are effectively shielded by the metal body. Motorola, Inc., in comments filed with the FCC, has expressed the opinion that proper installation of a vehicle-mounted antenna to maximize the shielding effect is an effective way of limiting exposure. Motorola and other companies have recommended antenna installation either in the center of the roof or the center of the trunk. In response to concerns expressed over the commonly-used rear-window mounted cellular antennas, Motorola has recommended a minimum separation distance of 30-60 cm (1 -2 feet) to minimize exposure to vehicle occupants resulting from antenna mismatch for this type of antenna installation.

In summary, from data gathered to date, it appears that properly installed, vehicle-mounted, personal wireless transceivers using up to 3 watts of power would result in maximum exposure levels in or near the vehicle that are well below the FCC's safety limits. This assumes that the transmitting antenna is at least 15 cm (about 6 inches) or more from vehicle occupants. Time-averaging of exposure (either a 6 or 30minute period is specified) will usually result in still lower values when compared with safety guidelines.

(3) <u>Hand-held cellular telephones and PCS devices</u>

A question that often arises is whether there may be potential health risks due to the RF emissions from hand-held cellular telephones and PCS devices. The FCC's exposure guidelines, and the ANSI/IEEE and NCRP guidelines upon which they are based, specify limits for human exposure to RF emissions from hand-held RF devices in terms of *specific absorption rate (SAR)*. For exposure of the general public, e.g., exposure of the user of a cellular or PCS phone, the SAR limit is an absorption threshold of 1.6 watts/kg (W/kg), as measured over any one gram of tissue.

Measurements and computational analysis of SAR in models of the human head and other studies of SAR distribution using hand-held cellular and PCS phones have shown that, in general, the 1.6 W/kg limit is unlikely to be exceeded under normal conditions of use. Before FCC approval can be granted for marketing of a cellular or PCS phone, compliance with the 1.6 W/kg limit must be demonstrated. Also, testing of hand-held phones is normally done under conditions of maximum power usage. In reality, normal power usage is less and is dependent on distance of the user from the base station transmitter.

In recent years publicity, speculation and concern over claims of possible health effects due to RF fields from hand-held wireless telephones prompted industry-sponsored groups, such as Wireless Technology Research, L.L.C. (WTR) and Motorola, Inc., to initiate research programs aimed at investigating whether there is any risk to users of these devices. Past studies carried out at frequencies both higher and lower than those used for cellular and PCS phones have led expert organizations to conclude that typical RF exposures from these devices are safe. However, the Federal Government is monitoring the results of the ongoing industry-sponsored research through an inter-agency working group led by the EPA and the FDA's Center for Devices and Radiological Health.

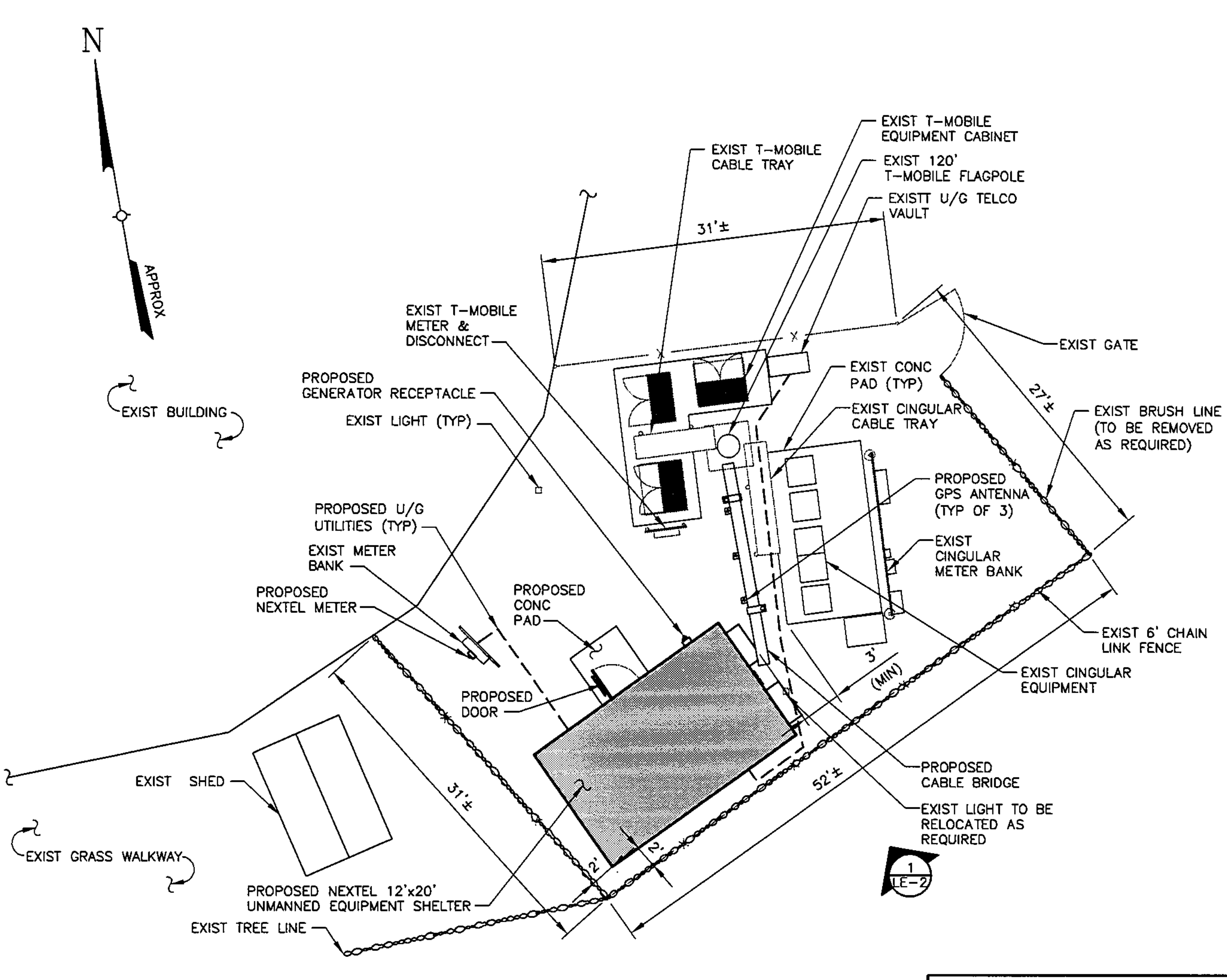
In a 1993 "Talk Paper," the FDA stated that it did not have enough information at that time to rule out the possibility of risk, but if such a risk exists "it is probably small." The FDA concluded that there is no proof that cellular telephones can be harmful, but if individuals remain concerned several precautionary actions could be taken. These included limiting conversations on hand-held cellular telephones to those that are essential and making greater use of telephones with vehicle-mounted antennas where there is a greater separation distance between the user and the radiating structure.

***NOTE*:** For more information on these and other RF-related topics, you may call the FCC's toll-free number: 1-888-CALL FCC (1-888-225-5322) or contact the FCC's RF Safety Program, in the Office of Engineering and Technology, at (202) 418-2464. Information is also available at the FCC's Office of Engineering and Technology World Wide Web Site under the "RF Safety" heading at the following address: www.fcc.gov/oet/rfsafety.

Appendix C: Expert Qualifications

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	• More than 33 years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 8,500 antenna sites since 1997, when the latest FCC regulations went into effect • Has provided testimony as an RF compliance expert more than 850 times since 1997 • Have been accepted as an expert in New Jersey, New York, Connecticut and 40 other states, as well as by the FCC
Education:	• B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	• leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	• Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore, Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Director – Spectrum Management Policy and Practice, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	• Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models later adopted by the FCC for predicting RF exposure • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	• Author, *Microwave System Engineering* (AT&T, 1974) • Co-author and executive editor, *A Guide to New Technologies and Services* (Bellcore, 1993) • National Spectrum Managers Association (NSMA) – three-term President and chair of the Board of Directors; earlier was founding member, twice-elected Vice President and long-time member of the Board, and was named an NSMA Fellow in 1991 • Listed in *Who's Who in the Media and Communication* and *International Who's Who in Information Technology* • Published more than 35 articles in industry magazines

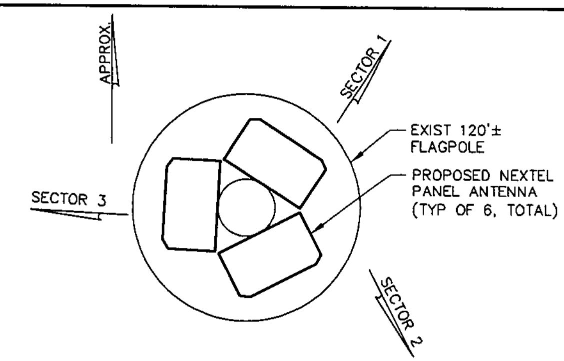


1 LE-1 SITE DETAIL PLAN

SCALE: 1" = 10'

LAT. = 41° 12' 37.2" (NAD 83)
LONG. = 73° 10' 52.5" (NAD 83)

0 1 2 3
ORIGINAL SIZE IN INCHES



(@ 84'-6"± & @ 89'-6"±)

2 LE-1 ANTENNA MOUNTING PLAN

SCALE: 3/4" = 1'-0"

TOTAL NUMBER OF SECTORS	3
TOTAL NUMBER OF ANTENNAS PER SECTOR	2
TOTAL NUMBER OF ANTENNAS	6
TOTAL NUMBER OF GPS DEVICES	3
TOTAL NUMBER OF CABLES (IN FLAGPOLE)	15 (7/8" DIA)
TOTAL SF OF LEASE EQUIPMENT SPACE	360±

SIGNOFFS
PM: ____
CM: ____
RF: ____
OPS: ____
CFS: ____
LL: ____

OWNER APPROVAL: ____ DATE: ____

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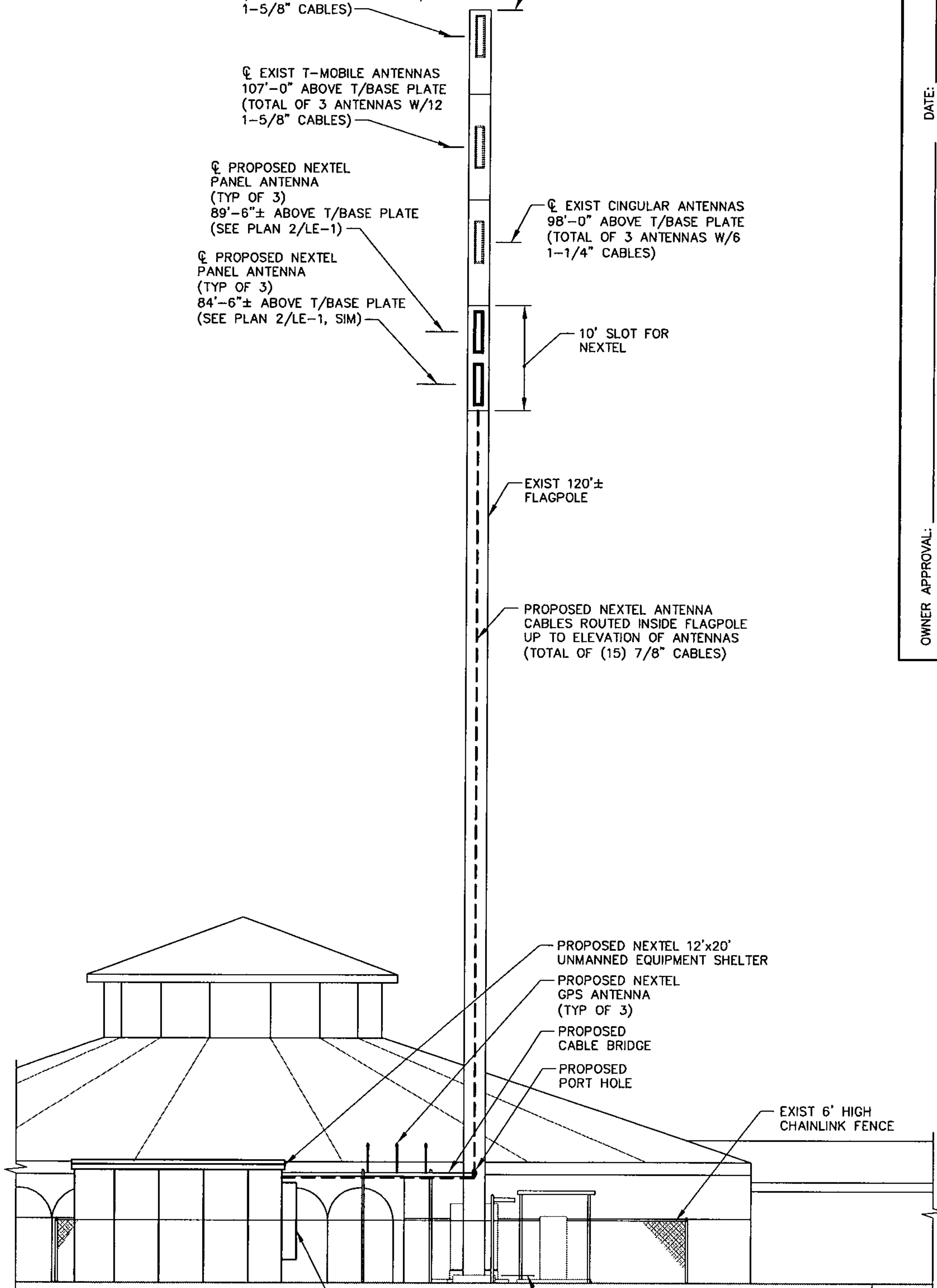
9/19/05
9/6/05
8/8/05
7/14/05
7/6/05

NEXTEL

BRIDGEPORT RESERVOIR (CT-2922)
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

ISSUED BY: W.O. 3722.CT2922

LEASE EXHIBIT LE-1



ELEVATION NOTE:
ELEVATION OF EXISTING GRADE HAS BEEN ARBITRARILY ASSIGNED AS EL 47'-0"± AMSL. TAKEN FROM THE BRIDGEPORT, CT USGS QUAD MAP, AND DOES NOT NECESSARILY CORRESPOND TO ACTUAL ELEVATION ABOVE SEA LEVEL. ALL OTHER ELEVATIONS INDICATED WERE DETERMINED ON THIS BASIS.

1 / LE-2 ELEVATION
SCALE: 1" = 10'

SIGNOFFS
PM:
CM:
RF:
OPS:
CFS:
LL:

OWNER APPROVAL:
DATE:

NEXTEL

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7/14/05
7/6/05

ISSUED BY:
W.O. 3722.CT2922
LEASE EXHIBIT
LE-2

ORIGINAL SIZE IN INCHES
0 1 2 3