

## TECHNICAL NARRATIVE

This Technical Narrative and attached exhibits were prepared on behalf of Alliance Radio, LLC (“Alliance”), licensee of WPNA-FM, Facility ID No. 74177, Channel 276A, Niles, Illinois. Alliance herein proposes an FCC minor change application to modify WPNA-FM to operate from a rooftop transmit location in Chicago, IL.

The proposed transmit location is a rooftop site in Chicago, IL. The building is not registered with an FCC Antenna Registration Number ("ASR"). No changes are being made to the building or foundation. Therefore, it is believed that a Section 106 review by the SHPO/THPO is not required. The proposed transmitting antenna is an ERI Model LP-3E 3 bay half wave spaced antenna operating at 2.15 kW ERP with a center of radiation of 160.0 meters above ground level. The proposed new WPNA-FM facility would operate on Channel 276A with an effective radiated power of 2.15 kW non-directional at 159.1 meters height above average terrain.

The coordinates of the proposed WPNA-FM application site are 41° 58' 49" North Latitude, 87° 39' 17" West Longitude (NAD 83). Based on the attached Channel Study, the site is fully spaced to all full power FM stations under Section 73.207 with three exceptions. WPNA-FM is short-spaced to second adjacent full power FM stations WVAZ, Channel 274B, Oak Park, IL and WKSC-FM, Channel 278B, Chicago, IL. WPNA-FM has been short-spaced to these two facilities since the original construction permit was granted in November 1960. WPNA-FM went on the air in February 1964. WPNA-FM is currently licensed under Section 73.213(a) with respect to WVAZ and WKSC-FM and will continue to do so following the proposed modification. No contour protections are required to second and third adjacent stations under

Section 73.213(a). WPNA-FM is also short-spaced to co-channel full power FM station WCSJ-FM, Channel 276A, Morris, IL. Alliance proposes to adopt Section 73.215 contour protection with respect to WCSJ-FM.

The WPNA-FM Application Site F(50,50) 70 dBu city grade contour does not reach 80 percent percent of the Niles, IL corporate boundaries. Therefore, a Section 73.315 Supplemental Showing is provided demonstrating city grade coverage of Niles with Longley-Rice signal propagation.

Studies have been undertaken to show the proposed WPNA-FM facility is in compliance with the Commission's radio frequency emission standards and are included as exhibits.

**WPNA-FM Application Site Channel Study**

REFERENCE						DISPLAY DATES	
41 58 49.0 N.				CLASS = A	Int = AA	DATA	07-16-23
87 39 17.0 W.				Current Spacings to 3rd Adj.		SEARCH	07-16-23
----- Channel 276 - 103.1 MHz -----							
Call	Channel	Location		Azi	Dist	FCC	Margin
Lat.	Lng.	Ant	Power		HAAT		
-----							
WPNA-FM	LIC-N 276A	Niles		IL 344.0	7.7	114.5	-106.8
42 02 50.0	87 40 50.0	NCN	6.000 kW		91 M		
	Alliance Radio, LLC		0000216921				
AL250767	ALO-D 276A	Niles		IL 344.0	7.7	114.5	-106.8
42 02 50.0	87 40 50.0	D	0.000 kW		100 M n		
			0000216641				
WVAZ	LIC 274B	Oak Park		IL 163.9	9.4	68.5	-59.1
41 53 56.1	87 37 23.2	CN	3.800 kW		425 M		
	Ihm Licenses, LLC		BLH20150622AFI				
<b>Note: Section 73.213(a) grandfathered short-spaced station</b>							
WKSC-FM	LIC 278B	Chicago		IL 172.0	11.4	68.5	-57.1
41 52 44.1	87 38 08.2	CN	4.300 kW		472 M		
	Ihm Licenses, LLC		BLH20010413AAM				
<b>Note: Section 73.213(a) grandfathered short-spaced station</b>							
W276BM	LIC-D 276D	Tinley Park		IL 192.9	48.7	84.5	-35.8
41 33 10.0	87 47 09.0	DCN	0.100 kW	0 M			
	Polnet Communications, Ltd		0000097678				
WCSJ-FM	LIC-Z 276A	Morris		IL 216.7	95.0	114.5	-19.5
41 17 35.1	88 20 04.2	ZCN	6.000 kW		100 M		
	Grundy County Broadcasters		BMLH20140205ACR				
			0000216642				
<b>Note: Adopt Section 73.215 contour protection with respect to WCSJ-FM</b>							
WHQG	LIC 275B	Milwaukee		WI 347.4	121.5	112.5	9.0
43 02 49.0	87 58 52.3	CN	50.000 kW		130 M		
	Lakefront Communications,		BLH20080717ADP				
WVLP-LP	LIC 276L1	Valparaiso		IN 138.6	75.7	66.5	9.2
41 28 05.1	87 03 14.1	CN	0.100 kW		30 M		
	Neighbors, Corp.		BLL20151223BPW				
WVLP-LP	CP 276L1	Valparaiso		IN 138.9	76.1	66.5	9.6
41 27 48.2	87 03 15.0	CY	0.082 kW		33 M		
	Neighbors, Corp.		0000198333				
WGFB	LIC 276A	Rockton		IL 290.5	125.9	114.5	11.4
42 22 02.1	89 05 13.4	CN	2.400 kW		160 M		
	Long Nine, Inc.		BLH20090713AAM				
WHME	LIC 276A	South Bend		IN 108.9	126.9	114.5	12.4
41 36 11.1	86 12 51.0	CN	3.000 kW		91 M		
	Family Broadcasting Corpor		BLH19831005AD				
WPWX	LIC-D 222B	Hammond		IN 164.8	40.2	14.5	25.8
41 37 50.1	87 31 40.2	DCN	50.000 kW		150 M		
	Dontron, Inc.		BMLH20110815ACZ				

Call	Channel	Location		Azi	Dist	FCC	Margin
Lat.	Lng.	Ant	Power		HAAT		
WQBH-LP	LIC 275L1	St. Joseph	MI 82.4	99.9	55.5	44.4	
42 05 34.1	86 27 28.0	CN	0.061 kW	38 M			
	Marriage And Family Commit		BLL20150721AAG				
W223CN	APP-D 223D	Zion	IL 327.3	61.2	9.5	51.7	
42 26 34.8	88 03 25.8	DCN	0.250 kW	0 M			
	Polnet Communications, Ltd		0000208896				
WMKB	LIC 275A	Earlville	IL 251.9	125.7	71.5	54.2	
41 37 16.1	89 05 20.3	CN	2.150 kW	170 M			
	Km Radio Of Earlville, L.L		BLH20030203CNW				
WXSS	LIC 279B	Wauwatosa	WI 350.7	125.7	68.5	57.2	
43 05 48.0	87 54 18.3	CN	19.500 kW	257 M			
	Audacy License, LLC		BMLH20010731ABY				
W273CZ	LIC-D 273D	Plano	IL 245.7	84.2	25.5	58.7	
41 39 55.1	88 34 34.3	DVN	0.025 kW	0 M			
	American Education Foundat		BLFT20190220ABG				

## **WPNA-FM Section 73.315 Supplemental Showing City Grade Coverage of Niles, Illinois**

This Supplemental Showing is based in part on the standards established in the FCC DA-10-1760 Skytower Communications decision. This supplemental showing uses Longley-Rice signal shading and Longley-Rice mean occurrence 70 dBu contour to show city coverage of Niles, IL. The WPNA-FM Longley-Rice 70 dBu mean occurrence contour distance was calculated using the standard settings established in OET Bulletin No. 69. The Longley-Rice coverage map was created using V-soft Probe Version 4.122 Professional. The specific software settings are listed on the map in the upper left hand corner of the map. The NED 3 second terrain database was used for all calculations. Signal values were not interpolated. The cell size was set at 0.25 km and profile increment was set at 0.1 km.

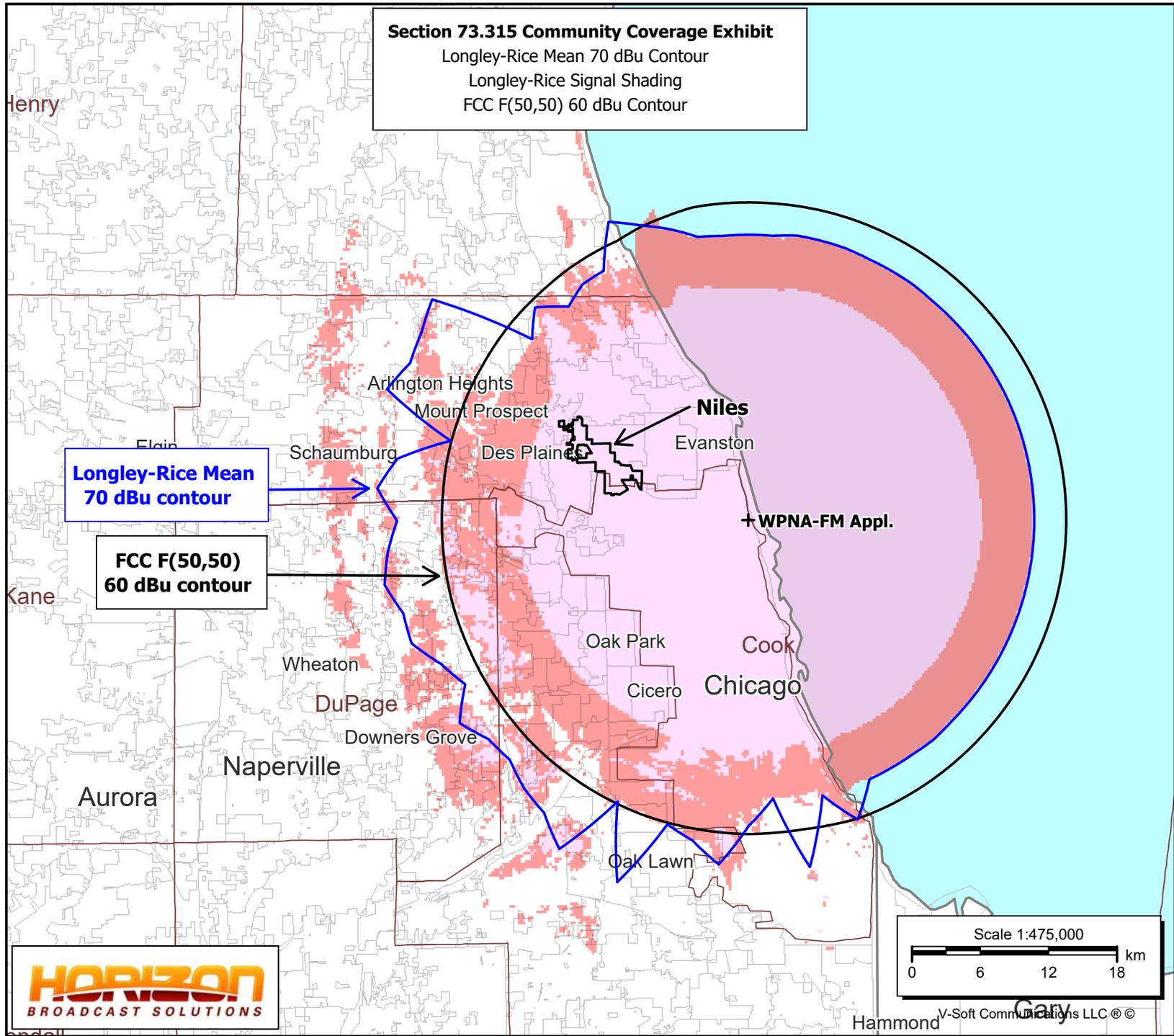
The signal Map shows the FCC F(50,50) 60 dBu reaches 100 percent of the total area of Niles. The Longley-Rice mean occurrence 70 dBu contour easily reaches 100 percent of Niles. The Longley-Rice signal shading shows that 100 percent of Niles receives a Longley-Rice signal strength of 74 dBu or greater.

Table One, "Comparison of FCC F(50,50) 70 dBu contour distance vs. Longley-Rice mean occurrence 70 dBu contour distance" shows the distances to the FCC 70 dBu contour and Longley-Rice 70 dBu mean occurrence contour distance for 12 of the 21 radials that cross over Niles. This table clearly establishes that the Longley-Rice mean 70 dBu contour along the radials that cross the corporate boundaries of Niles are more than 10% greater than the FCC F(50,50) 70 dBu contours. 100% of Niles is contained in the FCC F(50,50) 60 dBu contour.

Therefore, it is believed that this WPNA-FM modification application is in compliance with the Section 73.315 of the Commission's Community Coverage rules.

**WPNA-FM Appl.**  
 Niles, IL  
 Latitude: 41-58-49 N  
 Longitude: 087-39-17 W  
 ERP: 2.15 kW  
 HAAT: 159.11 m  
 Channel: 276  
 Frequency: 103.1 MHz  
 AMSL Height: 340.0 m  
 Elevation: 180.0 m  
 Horiz. Pattern: Omni  
 Vert. Pattern: No  
 Prop Model: Longley-Rice  
 Climate: Cont temperate  
 Conductivity: 0.0050  
 Dielec Const: 15.0  
 Refractivity: 311.0  
 Receiver Ht AG: 9.1 m  
 Receiver Gain: 0 dB  
 Time Variability: 50.0%  
 Sit. Variability: 50.0%  
 ITM Mode: Broadcast

**Section 73.315 Community Coverage Exhibit**  
 Longley-Rice Mean 70 dBu Contour  
 Longley-Rice Signal Shading  
 FCC F(50,50) 60 dBu Contour

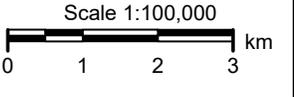
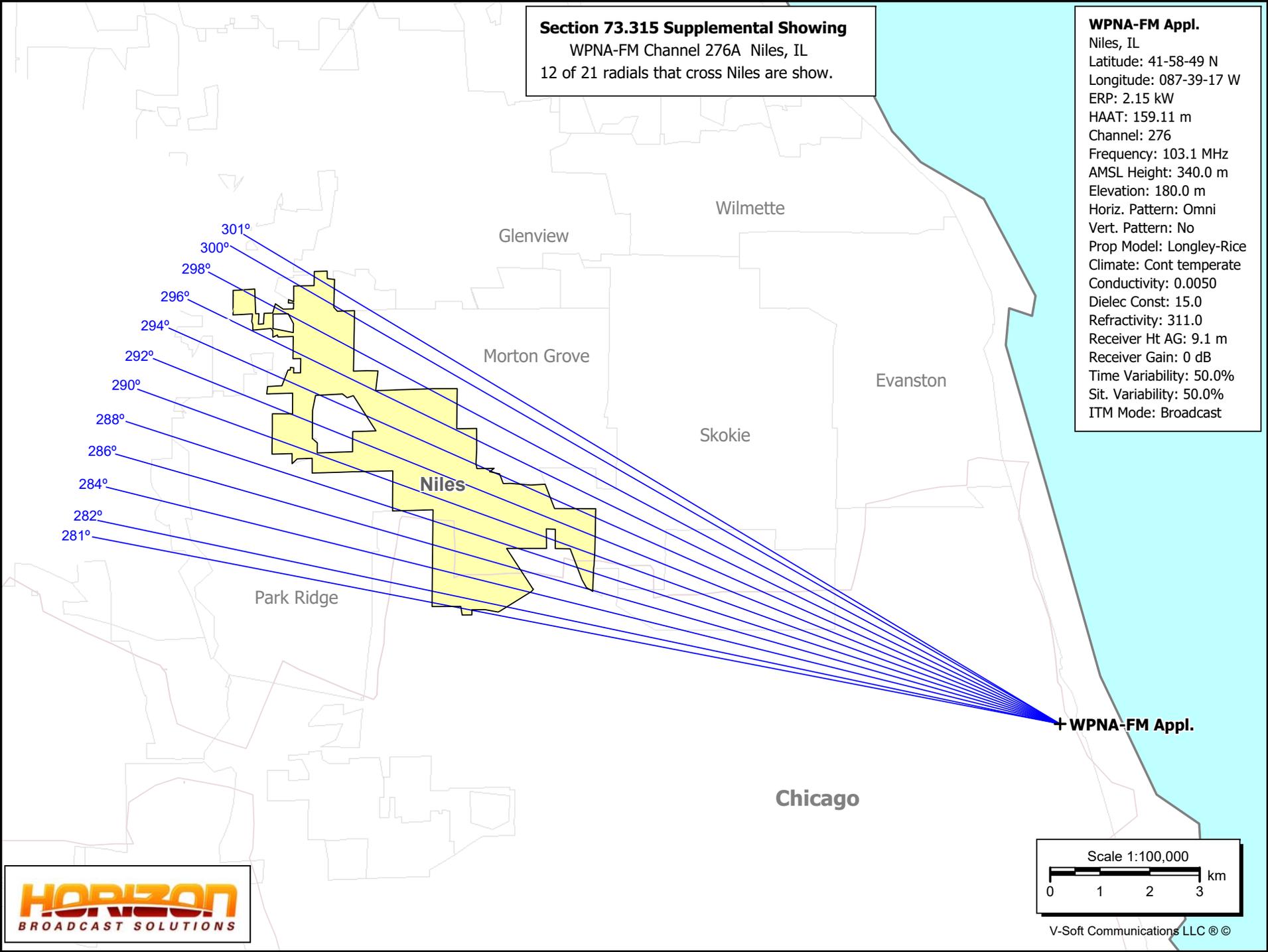


**Section 73.315 Supplemental Showing**

WPNA-FM Channel 276A Niles, IL  
12 of 21 radials that cross Niles are show.

**WPNA-FM Appl.**

Niles, IL  
Latitude: 41-58-49 N  
Longitude: 087-39-17 W  
ERP: 2.15 kW  
HAAT: 159.11 m  
Channel: 276  
Frequency: 103.1 MHz  
AMSL Height: 340.0 m  
Elevation: 180.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: Longley-Rice  
Climate: Cont temperate  
Conductivity: 0.0050  
Dielec Const: 15.0  
Refractivity: 311.0  
Receiver Ht AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 50.0%  
Sit. Variability: 50.0%  
ITM Mode: Broadcast



V-Soft Communications LLC ©

TABLE ONE  
 WPNA-FM Supplemental Coverage Showing:  
 Comparison of FCC F(50,50) 70 dBu contour distance  
 vs.  
 Longley-Rice median occurrence 70 dBu contour distance  
 (12 of 21 radials which cross Niles are shown)

Site:	WPNA-FM Modification Application				
Coordinates:	41-58-49 N ~ 87-39-17 W (NAD 83)				
Freq:	103.1 MHz				
ERP:	2.150 kW				
HAAT:	159.1 m				
Bearing (degrees)	ERP kW	HAAT (m)	FCC 70 dBu Distance (km)	Longley-Rice mean 70 dBu contour distance (km)	Percentage Increase
281	2.15	151	15.3	31.25	104.2%
282	2.15	151	15.3	31.30	104.6%
284	2.15	151	15.3	28.85	88.6%
286	2.15	151	15.3	27.25	78.1%
288	2.15	151	15.3	32.10	109.8%
290	2.15	151	15.3	33.65	119.9%
292	2.15	151	15.3	32.90	115.0%
294	2.15	151	15.3	32.80	114.4%
296	2.15	151	15.3	32.80	114.4%
298	2.15	151	15.3	32.70	113.7%
300	2.15	151	15.3	32.95	115.4%
301	2.15	151	15.3	33.00	115.7%
<b>Average</b>	<b>2.15</b>	<b>151.00</b>	<b>15.30</b>	<b>34.69</b>	<b>117.6%</b>

**WPNA-FM Appl.**

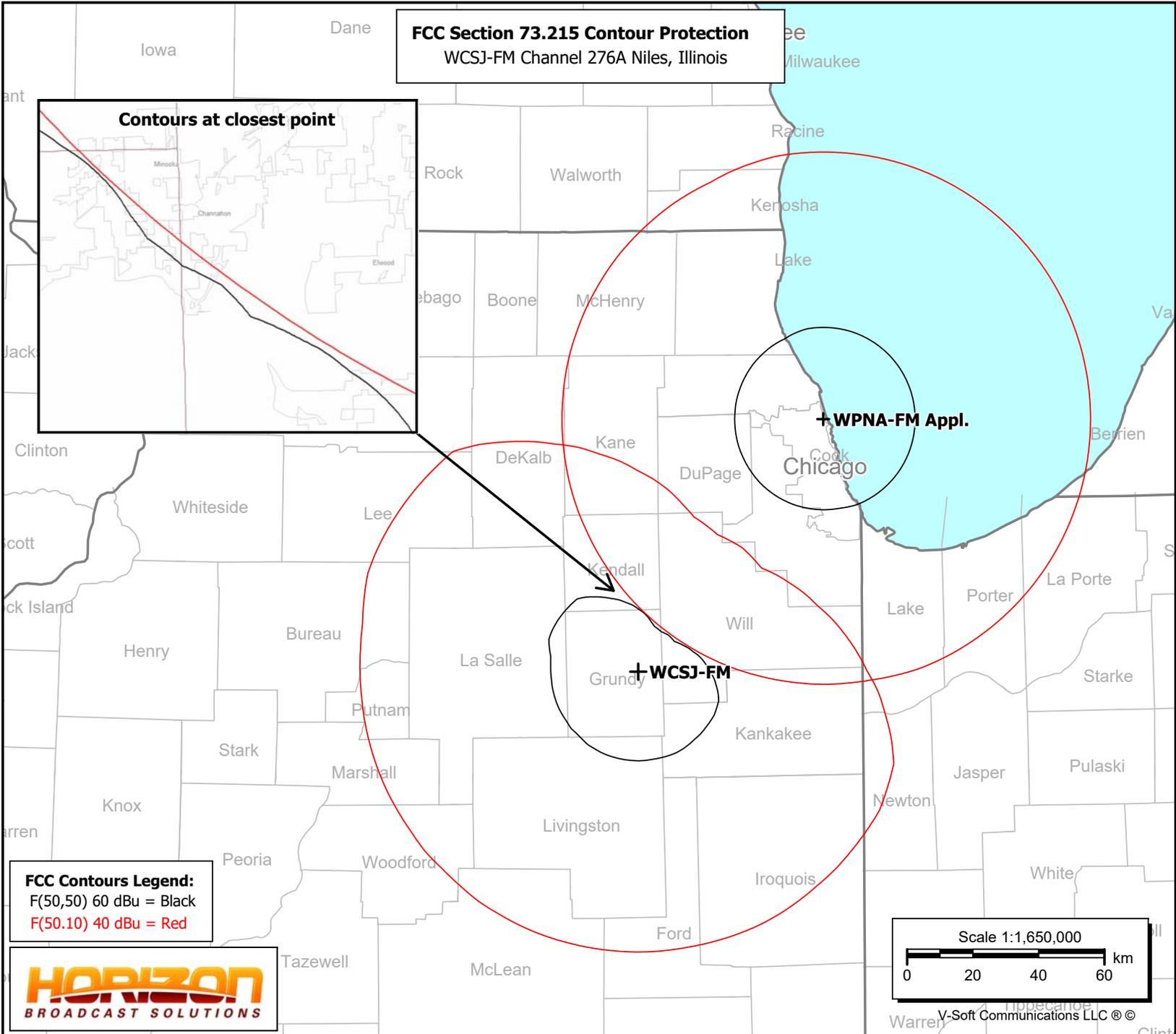
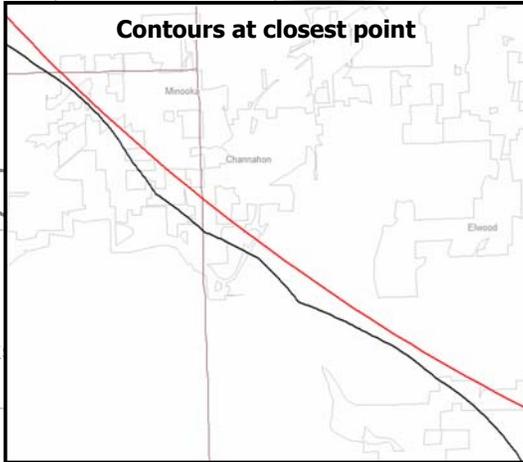
Highland Park, IL  
Latitude: 41-58-49 N  
Longitude: 087-39-17 W  
ERP: 2.15 kW  
HAAT: 159.11 m  
Channel: 276  
Frequency: 103.1 MHz  
AMSL Height: 340.0 m  
Elevation: 180.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**WCSJ-FM**

Morris, IL  
BMLH20140205ACR  
Latitude: 41-17-34.98 N  
Longitude: 088-20-03.97 W  
ERP: 6.00 kW  
HAAT: 100.0  
Channel: 276  
Frequency: 103.1 MHz  
AMSL Height: 266.0 m  
Elevation: 168.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

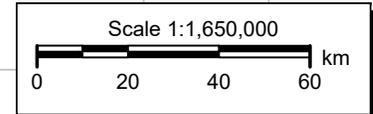
**FCC Section 73.215 Contour Protection**  
WCSJ-FM Channel 276A Niles, Illinois

**Contours at closest point**



**FCC Contours Legend:**

F(50,50) 60 dBu = Black  
F(50,10) 40 dBu = Red



V-Soft Communications LLC ©

**Human Exposure to Radiofrequency Electromagnetic Field  
Section 106 Compliance (Environmental)  
FAA Compliance**

Alliance Radio, LLC (“Alliance”) is the licensee of WPNA-FM, Facility ID No. 74177, Channel 276A, Niles, IL. Alliance herein proposes an FCC minor modification application to modify WPNA-FM to operate from a new transmit location. The proposed transmit location is a 54 story residential building with mast. The building is known as The Park Towers Condominiums and is located at 5415 N. Sheridan Rd. in Chicago, IL. The building excluding appurtenances is 157.3 meters in overall height above ground level and is not registered with an Antenna Registration Number ("ASR"). No changes are being made to the structure. Therefore, it is believed a Section 106 review by the SHPO/THPO is not required.

The top of the tower that the transmit antenna will be mounted to would be 6.0 meters above the highest measurable point of the building or 163.3 meters AGL. Title 47, Chapter 1 Subpart B — Federal Aviation Administration Notification Criteria Antenna structures requiring notification to the FAA Section 17.7 states that “A notification to the FAA is required, except as set forth in paragraph (e) for any of the following construction or alteration: (e)(3); Any antenna structure of 6.10 meters (20 feet) or less in height, except one that would increase the height of another antenna structure”. Therefore, it is believed to be compliant as an unregistered rooftop site because it will comply with the 6.1 meter rule.

The coordinates of the proposed application site are 41° 58' 49" North Latitude, 87° 39' 17" West Longitude (NAD 83). The proposed transmitting antenna is an ERI Model LP-3E side mounted 3 bay half wave antenna operating at 2.150 kW ERP non-directional with a center of radiation of 340.0 meters AMSL and 160.0 meters above ground level. The ERI LP antenna is included in the recently revised OET FM Model Program under Type 3, opposed "U" dipole. Using the FM Model for Windows program, the proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission’s OET Bulletin Number 65. The proposed rooftop site has highly restricted access and is not available to the general public. The proposed antenna center of radiation is 160 meters above ground level. The building has 55 occupied floors above ground level. There are two levels above the highest occupied floor. The lower level is an equipment penthouse and extends 4.3 meters above the highest occupied floor. The upper level is an elevator penthouse with a cooling tower that extends 5.4 meters above the lower level and 9.6 meters above the top of the highest occupied floor. The highest occupied floor is approximately 5 meters tall. Therefore, the top of the upper level is 14.7 meters above the floor of the highest occupied floor. The WPNA-FM transmit antenna center of radiation will be 3.5 meters above the highest point of the upper level of the building. The antenna center of radiation will be 18.2 meters (59.7 ft.) above the floor level of the highest occupied floor. Therefore, the height used on the FM Model program is 18.2 meters. Please see the rooftop antenna mount diagram that is included with this exhibit. The maximum calculated signal density near the tower at two meters above floor of the highest occupied floor attributable to the proposed facility is 7.101  $\mu\text{W}/\text{cm}^2$  at 8.7 meters, which is 3.551 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in 1.1307(b) regarding sites with multiple emitters, which excludes applicant from responsibility for taking any corrective action in areas where the proposal’s contribution is less than five percent. This is the tallest building in the immediate area. Therefore, no adjacent high-rise buildings would receive signal densities greater than those shown for this building.

Access to the rooftop is highly restricted and the only access is through the mechanical level on the 56<sup>th</sup> floor. This floor is locked and only available to Park Tower employees. The door that leads to the rooftop area is clearly marked with RFR warning signs. Please see the email from Patrik Janik, Chief Engineer of Park Towers Condominium Association that is included with this exhibit. Also see the photo of the door leading to the rooftop and the photo titled “WPNA-FM Park Towers Condominium Application Site Rooftop Vertical Distances” which illustrates the vertical distances from the floor level of the 55<sup>th</sup> floor, the highest occupied floor to the top of the tower.

The applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The applicant will cooperate with other users of the rooftop site to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to access the rooftop area for maintenance or inspection.

# FM Model

## Radio Frequency Safety

FCC Policy on Human Exposure

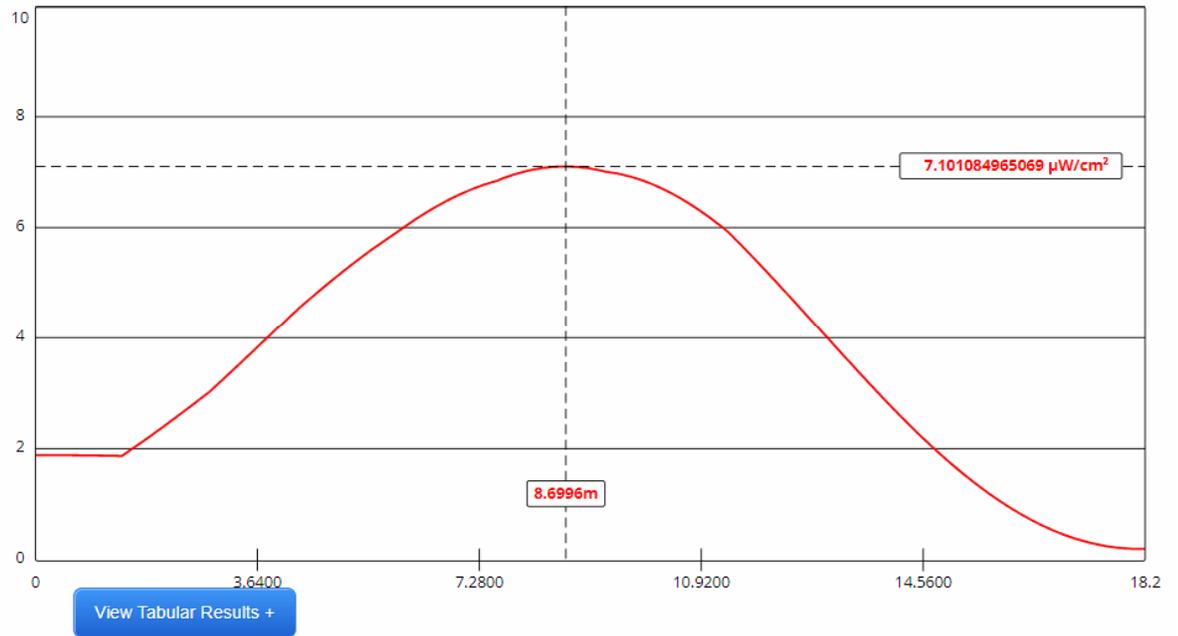
RF Safety Highlighted Releases

RF Safety FAQ

**FM Model**

Body Tissue Dielectric Parameters

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data published in 1985 by the EPA. [Show More....](#)



Channel Selection	Channel 276 (103.1 MHz) ▼		
Antenna Type +	EPA Type 3: Opposed U Dipole ▼		
Height (m)	18.2	Distance (m)	18.2
ERP-H (W)	2150	ERP-V (W)	2150
Num of Elements	3	$\lambda$	0.5
Num of Points	500	Apply	

**Subject:** Re: Attn: Patrik Janik - Rooftop lease through American Tower  
**From:** Park Tower <parktowerengineering@gmail.com>  
**Date:** 8/4/2023, 11:56 AM  
**To:** Horizon Broadcast Solutions <hbs@email.com>

Hi Donald

I have attached the pictures of the secured area of the mechanical rooms in the 56th floor. No one can access these only employees of park tower, anytime a vendor needs to access these areas they are escorted by security.

The highest point of the 57st story elevator mechanical room, the roof access above that is the aviation lights.

I do not have a physical plan of the layout of the mechanical rooms.

**Park Tower Condominium Association  
Engineer's Office**

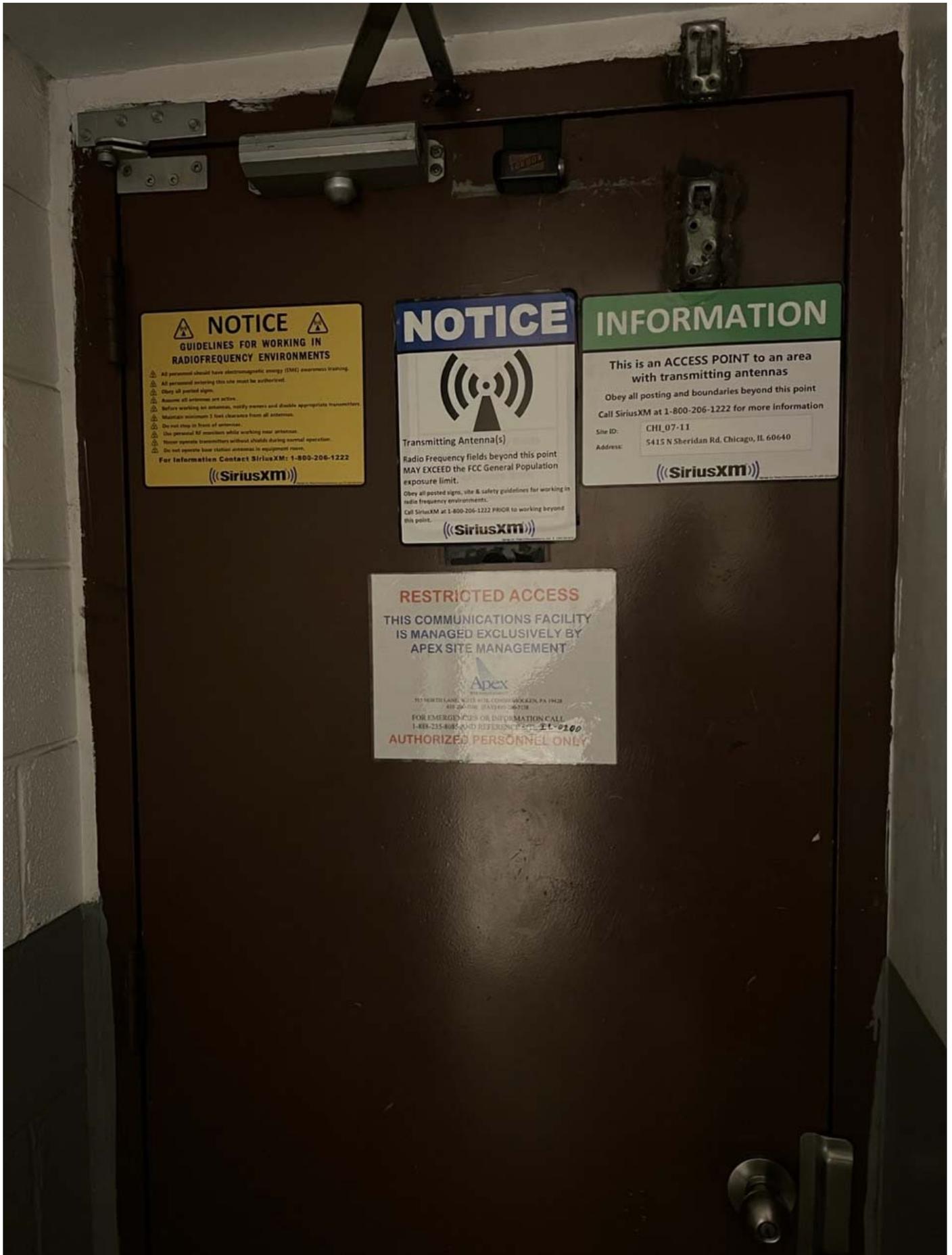
Patrik Janic, Chief Engineer  
Bill Rini, Assistant Chief Engineer

[5415 North Sheridan Road](#)  
[Chicago, IL 60640](#)

Direct : [\(773\) 944-5630](tel:(773)944-5630) | Management Office : [\(773\) 769-3250](tel:(773)769-3250)

9/1/2023, 9:03 AM

This locked door is the only access to the rooftop area



**NOTICE**  **GUIDELINES FOR WORKING IN RADIOFREQUENCY ENVIRONMENTS**

- All personnel should have electromagnetic energy (EME) awareness training.
- All personnel entering this site must be authorized.
- Obey all posted signs.
- Assume all antennas are active.
- Before working on antennas, notify owners and disable appropriate transmitters.
- Maintain minimum 3 foot clearance from all antennas.
- Do not step in front of antennas.
- Use personal RF monitors while working near antennas.
- Never operate transmitters without shields during normal operation.
- Do not operate base station antennas in equipment rooms.

For Information Contact SiriusXM: 1-800-206-1222

**(((SiriusXM)))**

**NOTICE**



Transmitting Antenna(s)

Radio Frequency fields beyond this point MAY EXCEED the FCC General Population exposure limit.

Obey all posted signs, site & safety guidelines for working in radio frequency environments.

Call SiriusXM at 1-800-206-1222 PRIOR to working beyond this point.

**(((SiriusXM)))**

**INFORMATION**

This is an ACCESS POINT to an area with transmitting antennas

Obey all posting and boundaries beyond this point

Call SiriusXM at 1-800-206-1222 for more information

Site ID: CHI\_07-11

Address: 5415 N Sheridan Rd, Chicago, IL 60640

**(((SiriusXM)))**

**RESTRICTED ACCESS**

THIS COMMUNICATIONS FACILITY IS MANAGED EXCLUSIVELY BY APEX SITE MANAGEMENT



911 HERTZ LANE, SUITE 0101, CONROCK, WYOMING, WY 82408  
409-264-7700 303-640-2600

FOR EMERGENCIES OR INFORMATION CALL  
1-888-235-8085 (TOLL FREE) 303-640-2600

**AUTHORIZED PERSONNEL ONLY**



# WPNA-FM Park Towers Condominium Application Site Rooftop Vertical Distances



WPNA-FM Niles, Illinois  
Park Tower Condominiums  
Rooftop Antenna Configuration

