

## **TECHNICAL REPORT**

This technical report has been developed in support of an application for a minor modification to WXCL(FM) 285A at Pekin, IL, FCC facility I.D. 33879. Changes in tower site, COR and antenna are submitted. The following exhibits are provided for the 301 minor modification:

- E-1 WXCL(FM) 285A Spacing Study
- E-2 70 dBu FCC Contour Plot Coverage of Pekin, IL
- E-3 HAAT Calculation
- E-4 RF Calculation
- E-5 ASR 1247127

### **WXCL(FM) Modification Analysis:**

A spacing study (exhibit E-1) shows WXCL(FM) modification is fully-spaced at its new site. WXCL(FM) places a 70 dBu contour over 100% of the Pekin, IL community of license (exhibit E-2).

### **WXCL(FM) Antenna System:**

The facility will be located on the existing tower, ASR 1247127, at coordinates:

**40-38-53.0N 089-33-26.0W NAD83.**

An ERI LPX-2E two bay, 0.5 wavelength-spaced, nondirectional antenna will be mounted at a COR AGL of 94.0 meters, 292.0 meters AMSL, 99.9 meter HAAT (exhibit E-3) and will operate at an ERP of 6.0 kW.

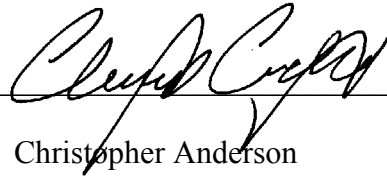
### **RF Exposure Calculation:**

The RF was calculated using the Commission's FMMODEL program (exhibit E-4). The maximum RF at a height of 2 meters above ground was calculated to be 4.21

$\mu\text{Watts}/\text{cm}^2$  at a distance of 188.0 meters from the tower, which is below 5% of the 200  $\mu\text{Watts}/\text{cm}^2$  maximum general population exposure limit and is thereby excluded from consideration.

**Conclusion:**

It is concluded that the minor modification of WXCL(FM) is in full compliance with the Commission rules and policies.

A handwritten signature in black ink, appearing to read 'Christopher Anderson', is written over a horizontal line.

Christopher Anderson  
September 20, 2022  
andersce@bham.rr.com

© 2022 Anderson Associates

# E-1 WXCL(FM) 285A Mod. Spacing Study

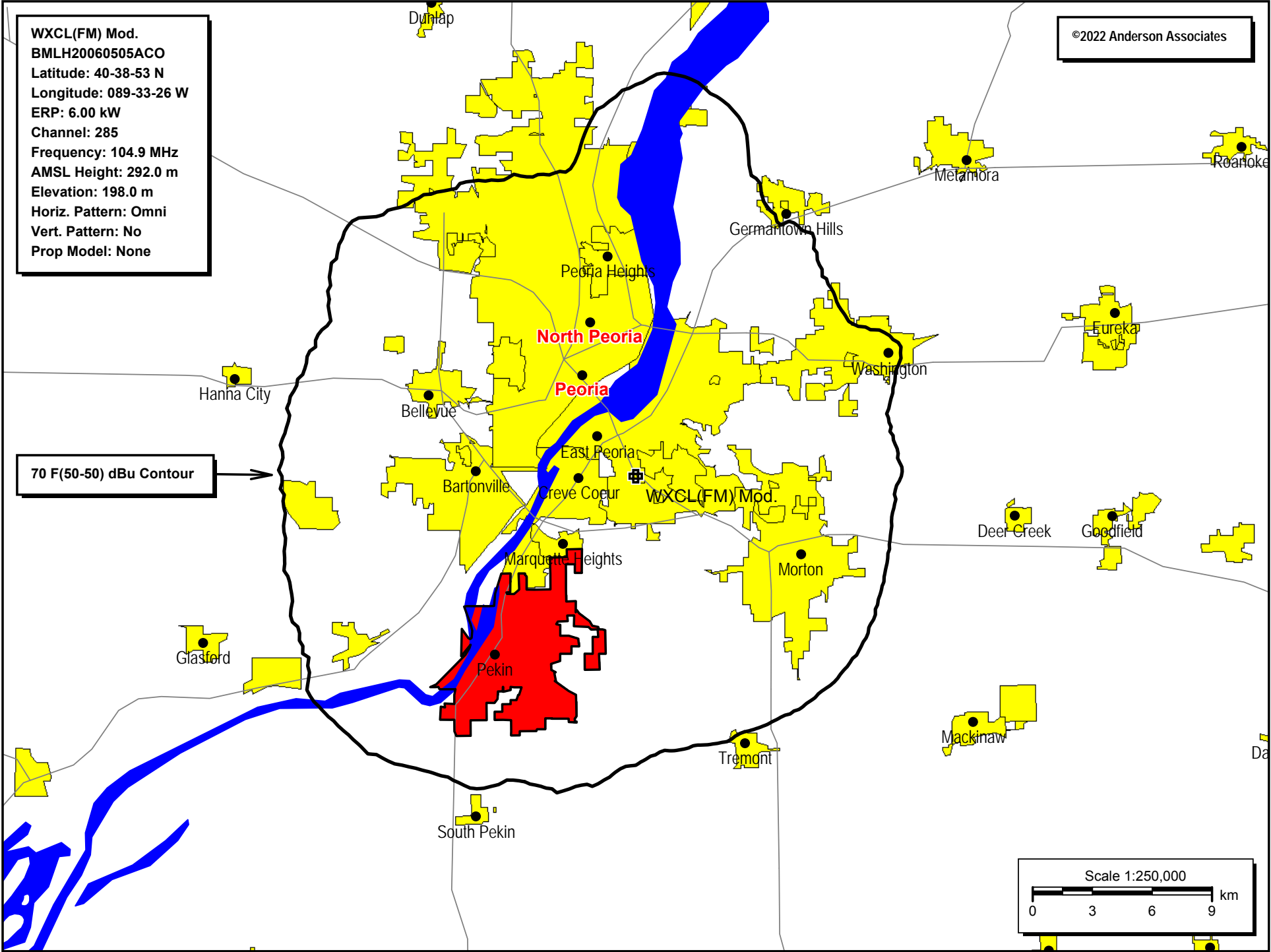
REFERENCE		CLASS = A	DISPLAY DATES
40 38 53.00 N.			DATA 09-20-22
89 33 26.00 W.	Current Spacings to 3rd Adj.		SEARCH 09-20-22
----- Channel 285 - 104.9 MHz -----			

Call	Channel	Location	Azi	Dist	FCC	Margin
WXCL	LIC 285A	Pekin	IL 117.6	1.26	114.5	-113.2
WXCL	ALO 285A	Pekin	IL 113.3	1.47	114.5	-113.0
AL07350	ALO 285C3	De Witt	IA 327.9	140.33	141.5	-1.2 (1)
KIHK-FM	LIC 285C3	De Witt	IA 324.9	146.26	141.5	4.8
WCFL	LIC-D 284B	Morris	IL 48.2	118.70	112.5	6.2
WLMD	LIC 284A	Bushnell	IL 262.1	79.56	71.5	8.1
WLMD	ALO 284A	Bushnell	IL 262.8	81.20	71.5	9.7
WCFL	ALO 284B	Morris	IL 50.9	122.21	112.5	9.7
WPXN	LIC 285A	Paxton	IL 99.5	125.06	114.5	10.6
WPXN	ALO 285A	Paxton	IL 99.5	125.06	114.5	10.6
WPMJ	ALO 232A	Chillicothe	IL 13.7	20.80	9.5	11.3
WPMJ	LIC 232A	Chillicothe	IL 13.7	20.80	9.5	11.3
WFMB-FM	ALO 283B	Springfield	IL 184.7	98.92	68.5	30.4
WFMB-FM	LIC 283B	Springfield	IL 184.7	98.92	68.5	30.4
WEJT	ALO 286B1	Shelbyville	IL 152.5	131.80	95.5	36.3
WEJT	LIC 286B1	Shelbyville	IL 152.5	131.81	95.5	36.3
WKAY	LIC 287A	Knoxville	IL 296.6	74.05	30.5	43.6

-----  
All separation margins include rounding

(1) Protection to the 285C3 allocation at De Witt, IA is not required.

E-2 WXCL(FM) 285A Mod. 70 dBu Contour Plot



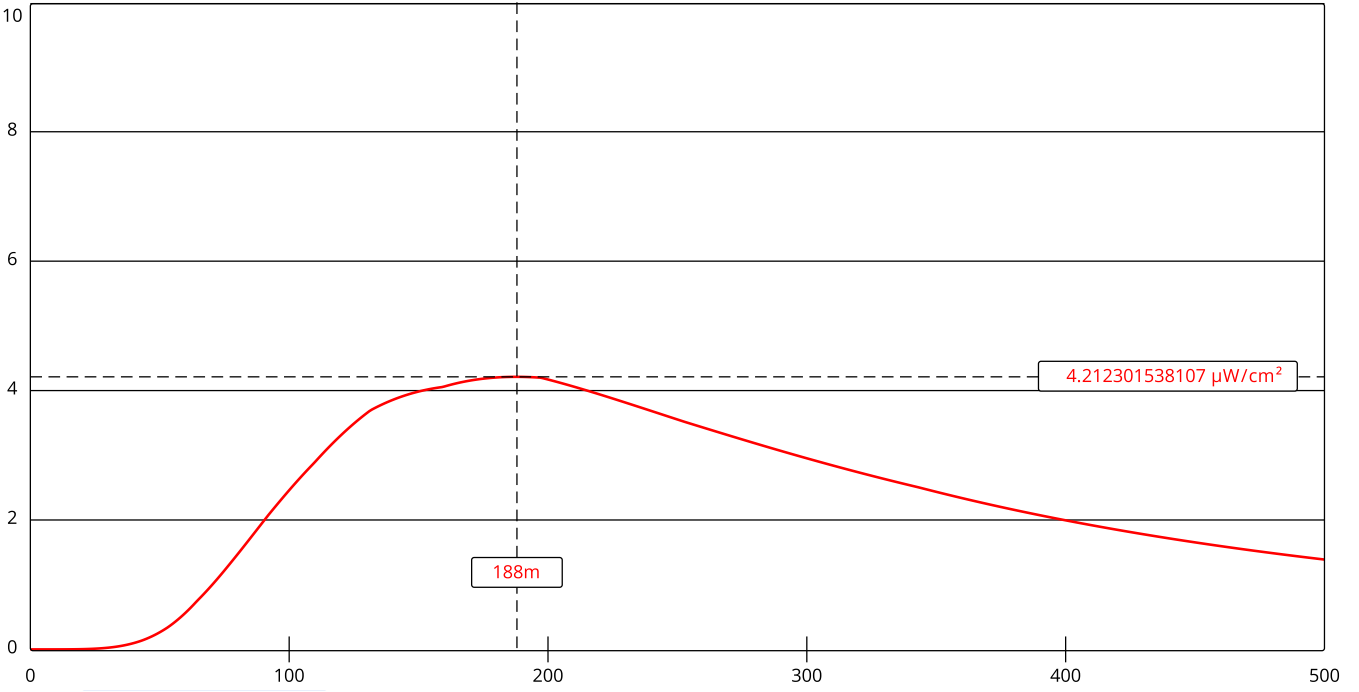
### E-3 HAAT and Contour Tabulation

N. Lat. = 40-38-53.0 W. Lng. = 89-33-26.0  
 HAAT and Distance to Contour,  
 FCC, FM 2-10 Miles, 51 points Method - FCC 30 Meter

AZ	AV EL	HAAT	ERP kW	70 dBu	60 dBu
000	147.9	144.1	6.0000	19.63	33.41
010	145.8	146.2	6.0000	19.78	33.66
020	187.4	104.6	6.0000	16.61	28.90
030	209.1	82.9	6.0000	14.54	25.90
040	213.3	78.7	6.0000	14.16	25.28
050	223.4	68.6	6.0000	13.28	23.76
060	210.6	81.4	6.0000	14.40	25.68
070	217.3	74.7	6.0000	13.82	24.69
080	227.4	64.6	6.0000	12.94	23.16
090	223.1	68.9	6.0000	13.31	23.82
100	226.5	65.5	6.0000	13.01	23.30
110	222.6	69.4	6.0000	13.35	23.89
120	216.6	75.4	6.0000	13.87	24.79
130	213.0	79.0	6.0000	14.19	25.33
140	212.5	79.5	6.0000	14.23	25.40
150	214.1	77.9	6.0000	14.09	25.16
160	214.9	77.1	6.0000	14.02	25.04
170	216.5	75.5	6.0000	13.88	24.81
180	209.8	82.2	6.0000	14.48	25.80
190	196.5	95.5	6.0000	15.72	27.68
200	190.7	101.3	6.0000	16.29	28.47
210	174.2	117.8	6.0000	17.74	30.49
220	159.5	132.5	6.0000	18.81	32.09
230	150.2	141.8	6.0000	19.47	33.15
240	157.0	135.0	6.0000	18.99	32.38
250	166.4	125.6	6.0000	18.32	31.33
260	173.0	119.0	6.0000	17.83	30.62
270	174.2	117.8	6.0000	17.74	30.49
280	175.6	116.4	6.0000	17.62	30.32
290	176.7	115.3	6.0000	17.54	30.21
300	174.0	118.0	6.0000	17.75	30.50
310	155.9	136.1	6.0000	19.07	32.50
320	173.4	118.6	6.0000	17.80	30.58
330	182.6	109.4	6.0000	17.04	29.50
340	193.9	98.1	6.0000	15.97	28.04
350	188.6	103.4	6.0000	16.49	28.74

Ave EI = 192.06 M HAAT= 99.94 M AMSL= 292 M

E-4 WXCL(FM) 285A Mod. RF Calculation



Channel Selection	Channel 285 (104.9 MHz) ▾		
<a href="#">Antenna Type +</a>	EPA Type 3: Opposed U Dipole ▾		
Height (m)	<input type="text" value="94.0"/>	Distance (m)	<input type="text" value="500"/>
ERP-H (W)	<input type="text" value="6000"/>	ERP-V (W)	<input type="text" value="6000"/>
Num of Elements	<input type="text" value="2"/>	λ	<input type="text" value="0.5"/>
Num of Points	<input type="text" value="500"/>		

## ASR Registration 1247127

### Registration Detail

Reg Number	1247127	Status	Constructed
File Number	A0942535	Constructed	03/22/2006
EMI	No	Dismantled	
NEPA	No		

### Antenna Structure

Structure Type GTOWER - Guyed Structure Used for Communication Purposes

#### Location (in NAD83 Coordinates)

Lat/Long	40-38-53.0 N 089-33-26.0 W	Address	wooded area near end of Highpoint (a south frontage road to I-74)
City, State	near East Peoria , IL		
Zip	61611	County	TAZEWELL
Center of AM Array		Position of Tower in Array	

#### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
198.0	152.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
350.0	150.0

### Painting and Lighting Specifications

FAA Chapters 4, 6, 12

Paint and Light in Accordance with FAA Circular Number 70/7460-1K

### FAA Notification

FAA Study	2013-AGL-1294-OE	FAA Issue Date	04/08/2013
-----------	------------------	----------------	------------

### Owner & Contact Information

FRN	0008650384	Owner Entity Type	Corporation
-----	------------	-------------------	-------------

#### Owner

Illinois Central Radio Fellowship Inc.  
Attention To: JIM HUBER  
1919 Mayflower Drive  
Pekin , IL 61554

P: (309)347-8850  
F:  
E: jim@wbnh.org

#### Contact

SOUTHMAYD , JEFFREY D

P: (386)445-9156

Attention To: JEFFREY D SOUTHMAYD  
4 OCEAN RIDGE BOULEVARD SOUTH  
PALM COAST , FL 32137

F: (888)557-3686  
E: JDSOUTHMAYD@MSN.COM

### Last Action Status

Status	Constructed	Received	04/21/2015
Purpose	Notification	Entered	04/21/2015
Mode	Interactive		

### Related Applications

04/21/2015      A0942535 - Notification (NT)  
04/09/2014      A0897545 - Admin Update (AU)  
04/09/2014      A0897527 - Modification (MD)  
Related applications (5)

### Comments

#### Comments

04/10/2014      Special Condition: The FAA has approved the absence of steady burning red obstruction (L-810) lights on this structure. Accordingly, this tower will employ dual lighting (Medium-intensity white flashing lights (L-865) for daytime use

04/10/2014      Special Condition: The FAA has approved the absence of steady burning red obstruction (L-810) lights on this structure. Accordingly, this tower will employ dual lighting (Medium-intensity white flashing lights (L-865) for daytime use

04/10/2014      and red flashing lights (L-864) for nighttime illumination). Refer to the Technical Report (Technical Note DOT/FAA/TC-TN12/9 Evaluation of New Obstruction Lighting Techniques to Reduce Avian Fatalities).

All comments (4)

### History

Date	Event
04/21/2015	Construction Notification Received
04/14/2015	Construction Reminder Letter Sent
04/11/2014	Registration Printed

All History (12)

### Pleadings

Pleading Type	Filer Name	Description	Date Entered
None			

### Automated Letters

04/14/2015      Construction Reminder, Reference 857651  
02/13/2006      Construction Reminder, Reference 486446  
02/10/2005      Authorization, Reference 402373