

**Exhibit B-17**  
**WPAY-FM Channel 281C Portsmouth, Ohio**  
**NIER Analysis**

**Facilities Proposed**

The proposed operation will be on Channel 281C (104.1 MHz) with a maximum lobe effective radiated power of 100 kilowatts. Operation is proposed with a 10-element circularly-polarized directional antenna. The antenna will be side-mounted on a uniform cross-section guyed tower located on a hilltop 0.5 miles south of Portsmouth. It should be noted that although the WPAY community of license is located in Ohio (within Zone I), the transmitter site is located in Kentucky (within Zone II).

The FCC Antenna Structure Registration Number for the WPAY tower is 1043740.

**NIER Calculations**

The only other broadcast stations located at this tower site are WOHP 202A Portsmouth and W66CZ Portsmouth. Any other nearby stations are located in excess of 200 meters from the WPAY tower site. Therefore, the only stations considered in this study are WPAY, WOHP, and W66CZ.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\text{mW} / \text{cm}^2) = \frac{33.40981 \times \text{AdjERP}(\text{Watts})}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

*D* is the distance in meters from the center of radiation to the calculation point.

Hatfield & Dawson Consulting Engineers

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed WPAY antenna system assume a Type 1 element pattern, which is the “worst case” element pattern for a ring-stub type antenna. Under this “worst case” assumption, the highest calculated ground level power density occurs at a distance of 53 meters from the base of the antenna support structure. At this point the power density is calculated to be  $32.8 \mu\text{W}/\text{cm}^2$ , which is 16.4% of the FCC standard for uncontrolled environments.

Calculations of the power density produced by the WOHP antenna system assume a Type 1 element pattern, which is the “worst case” element pattern for a ring-stub type antenna. Under this “worst case” assumption, the highest calculated ground level power density occurs at a distance of 14 meters from the base of the antenna support structure. At this point the power density is calculated to be  $6.4 \mu\text{W}/\text{cm}^2$ , which is 3.2% of the FCC standard for uncontrolled environments.

Calculations of the power density produced by the W66CY antenna system have been made using the manufacturer’s vertical plane pattern for the Andrew ALP16LC-HSOC antenna used by that station, and assuming the 12.4 kW ERP specified in that station’s construction permit. At depression angles more than 45 degrees below the horizontal, the

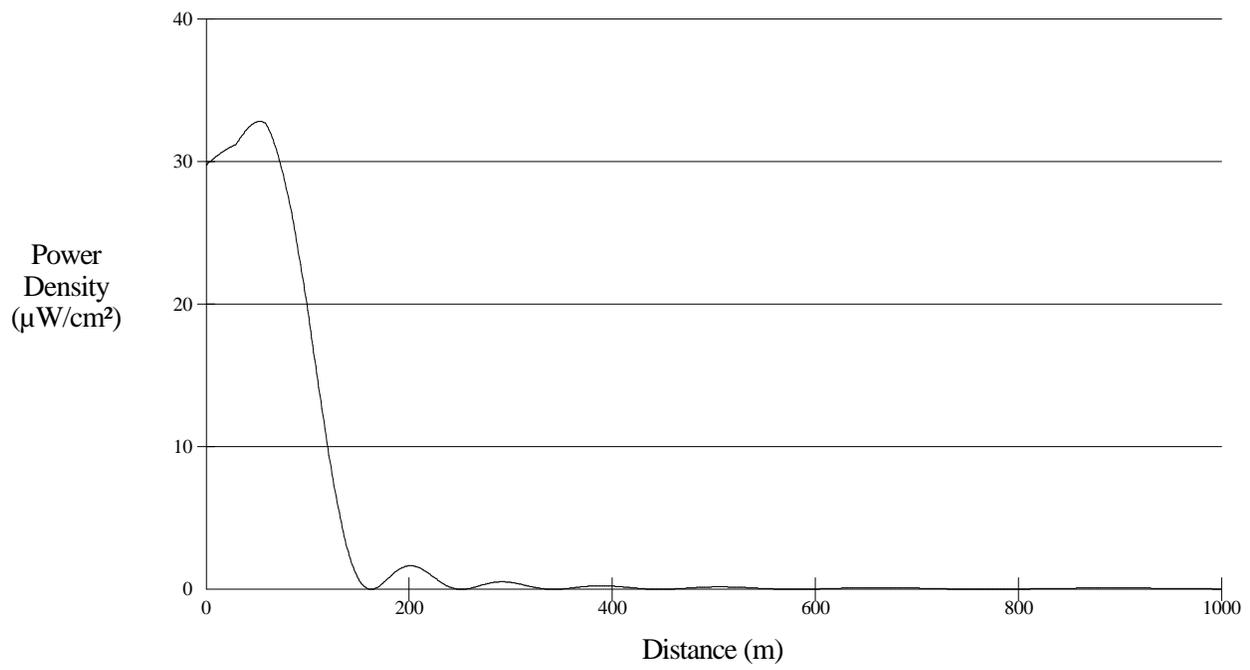
highest relative field value is 0.142. This relative field value yields a worst case adjusted effective radiated power of 150 Watts at depression angles between 45° and 90° below the horizontal (assuming 20% aural). Assuming this worst-case effective radiated power and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is calculated to be 0.4  $\mu\text{W}/\text{cm}^2$ , which is 0.1% of the FCC standard for uncontrolled environments at the Ch. 66 frequency.

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of WPAY, WOHP, and W66CZ (were their maxima to coincide, which they do not) is 36% of the FCC standard for uncontrolled environments. Please note that this study was made using “worst case” assumptions. It is likely that the actual antenna to be used for WPAY will produce a maximum ground-level power density which is below that calculated above.

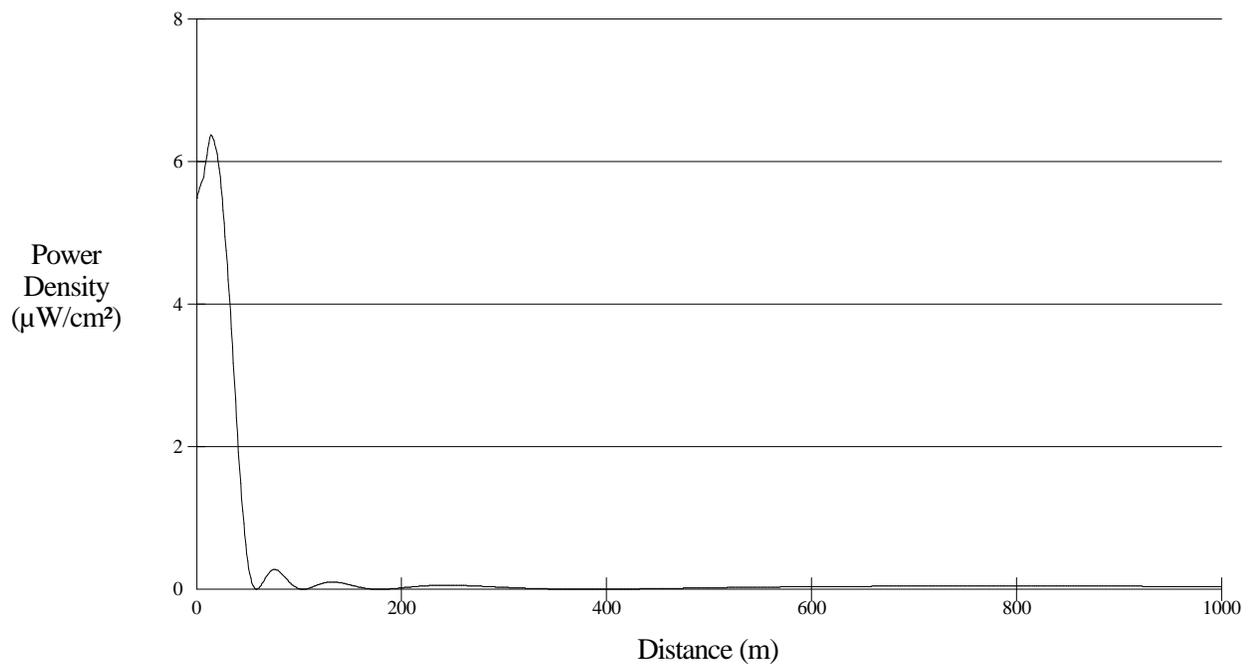
Public access to the site is restricted by a locked gate and the antenna tower is posted with warning signs. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

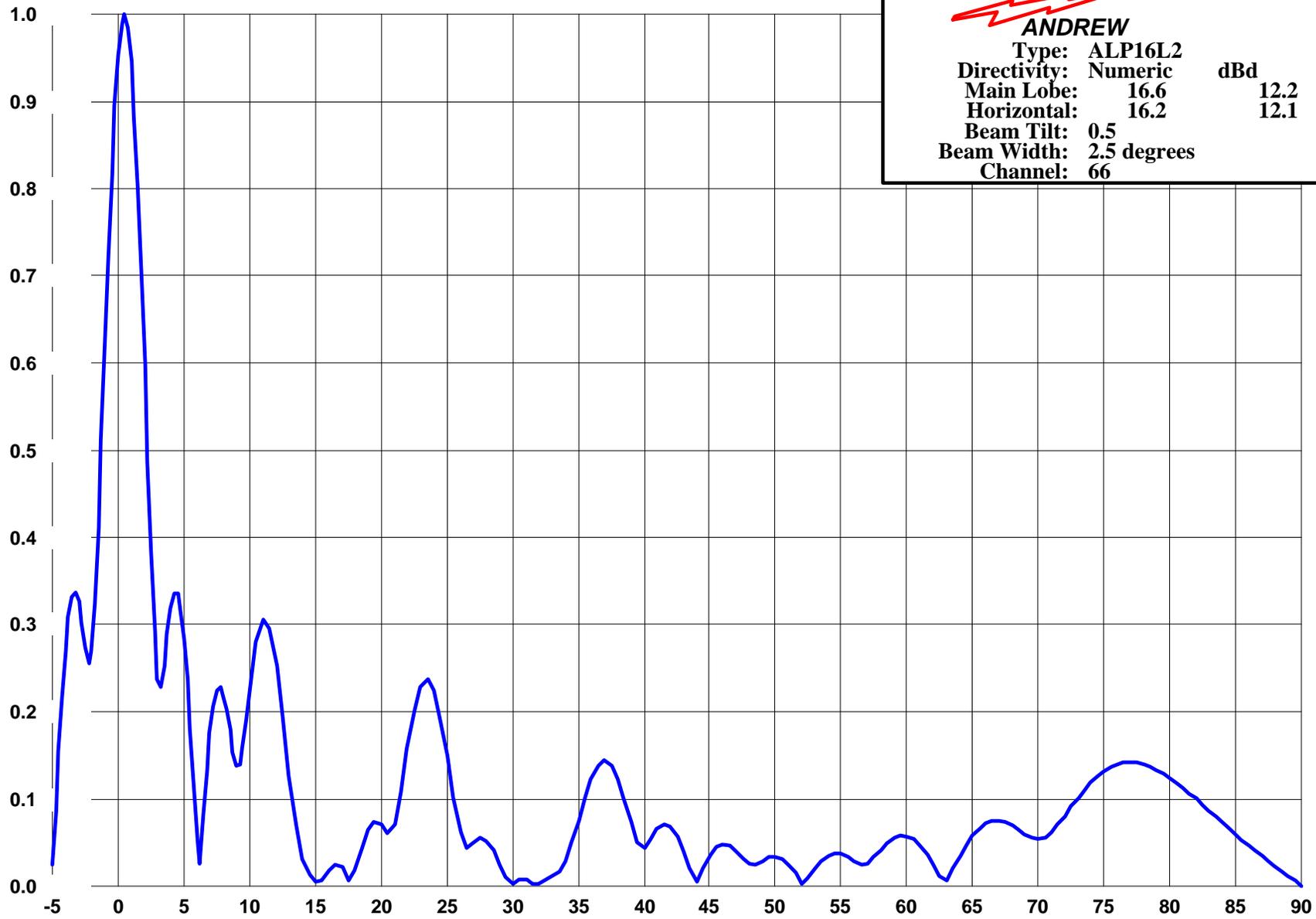
The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

Power Density vs Distance



Power Density vs Distance





**ANDREW**  
 Type: ALP16L2  
 Directivity: Numeric dBd  
 Main Lobe: 16.6 12.2  
 Horizontal: 16.2 12.1  
 Beam Tilt: 0.5  
 Beam Width: 2.5 degrees  
 Channel: 66

ANDREW CORPORATION  
 10500 W. 153rd Street  
 Orland Park, Illinois U.S.A. 60462

Company:  
 Site:  
 Proposal Number:

Author: Date: 11/12/2004



Type:ALP16L2 Beam Tilt: 0.5 deg  
 Directivity: 16.6 (12.2 dB) Chan: 66

Angle	Amp	dB									
-5.00	0.024	-32.40	9.00	0.138	-17.20	36.00	0.123	-18.20	63.50	0.021	-33.56
-4.75	0.086	-21.31	9.25	0.139	-17.14	36.50	0.138	-17.20	64.00	0.035	-29.12
-4.50	0.155	-16.19	9.50	0.159	-15.97	37.00	0.144	-16.83	64.50	0.047	-26.56
-4.25	0.218	-13.23	9.75	0.190	-14.42	37.50	0.138	-17.20	65.00	0.058	-24.73
-4.00	0.270	-11.37	10.00	0.224	-13.00	38.00	0.123	-18.20	65.50	0.066	-23.61
-3.75	0.309	-10.20	10.50	0.280	-11.06	38.50	0.100	-20.00	66.00	0.072	-22.85
-3.50	0.331	-9.60	11.00	0.306	-10.29	39.00	0.073	-22.73	66.50	0.075	-22.50
-3.25	0.337	-9.45	11.50	0.295	-10.60	39.50	0.050	-26.02	67.00	0.075	-22.50
-3.00	0.326	-9.74	12.00	0.253	-11.94	40.00	0.044	-27.13	67.50	0.073	-22.73
-2.75	0.302	-10.40	12.50	0.193	-14.29	40.50	0.054	-25.35	68.00	0.070	-23.10
-2.50	0.273	-11.28	13.00	0.127	-17.92	41.00	0.066	-23.61	68.50	0.064	-23.88
-2.25	0.256	-11.84	13.50	0.070	-23.10	41.50	0.071	-22.97	69.00	0.059	-24.58
-2.00	0.270	-11.37	14.00	0.031	-30.17	42.00	0.068	-23.35	69.50	0.055	-25.19
-1.75	0.324	-9.79	14.50	0.013	-37.72	42.50	0.057	-24.88	70.00	0.054	-25.35
-1.50	0.410	-7.74	15.00	0.005	-46.02	43.00	0.040	-27.96	70.50	0.056	-25.04
-1.25	0.512	-5.81	15.50	0.006	-44.44	43.50	0.020	-33.98	71.00	0.062	-24.15
-1.00	0.619	-4.17	16.00	0.018	-34.89	44.00	0.005	-46.02	71.50	0.071	-22.97
-0.75	0.723	-2.82	16.50	0.025	-32.04	44.50	0.021	-33.56	72.00	0.080	-21.94
-0.50	0.817	-1.76	17.00	0.022	-33.15	45.00	0.036	-28.87	72.50	0.091	-20.82
-0.25	0.895	-0.96	17.50	0.007	-43.10	45.50	0.045	-26.94	73.00	0.101	-19.91
0.00	0.954	-0.41	18.00	0.018	-34.89	46.00	0.048	-26.38	73.50	0.110	-19.17
0.25	0.989	-0.10	18.50	0.044	-27.13	46.50	0.046	-26.74	74.00	0.119	-18.49
0.50	1.000	0.00	19.00	0.065	-23.74	47.00	0.040	-27.96	74.50	0.126	-17.99
0.75	0.985	-0.13	19.50	0.074	-22.62	47.50	0.031	-30.17	75.00	0.132	-17.59
1.00	0.946	-0.48	20.00	0.071	-22.97	48.00	0.026	-31.70	75.50	0.137	-17.27
1.25	0.884	-1.07	20.50	0.061	-24.29	48.50	0.025	-32.04	76.00	0.140	-17.08
1.50	0.802	-1.92	21.00	0.071	-22.97	49.00	0.029	-30.75	76.50	0.142	-16.95
1.75	0.705	-3.04	21.50	0.109	-19.25	49.50	0.033	-29.63	77.00	0.142	-16.95
2.00	0.598	-4.47	22.00	0.157	-16.08	50.00	0.034	-29.37	77.50	0.142	-16.95
2.25	0.487	-6.25	22.50	0.201	-13.94	50.50	0.031	-30.17	78.00	0.140	-17.08
2.50	0.381	-8.38	23.00	0.229	-12.80	51.00	0.024	-32.40	78.50	0.137	-17.27
2.75	0.292	-10.69	23.50	0.238	-12.47	51.50	0.015	-36.48	79.00	0.133	-17.52
3.00	0.237	-12.51	24.00	0.225	-12.96	52.00	0.003	-50.46	79.50	0.129	-17.79
3.25	0.228	-12.84	24.50	0.194	-14.24	52.50	0.009	-40.92	80.00	0.124	-18.13
3.50	0.253	-11.94	25.00	0.150	-16.48	53.00	0.020	-33.98	80.50	0.118	-18.56
3.75	0.289	-10.78	25.50	0.102	-19.83	53.50	0.029	-30.75	81.00	0.112	-19.02
4.00	0.319	-9.92	26.00	0.062	-24.15	54.00	0.035	-29.12	81.50	0.106	-19.49
4.25	0.336	-9.47	26.50	0.044	-27.13	54.50	0.038	-28.40	82.00	0.100	-20.00
4.50	0.335	-9.50	27.00	0.049	-26.20	55.00	0.037	-28.64	82.50	0.093	-20.63
4.75	0.317	-9.98	27.50	0.055	-25.19	55.50	0.033	-29.63	83.00	0.086	-21.31
5.00	0.284	-10.93	28.00	0.052	-25.68	56.00	0.028	-31.06	83.50	0.080	-21.94
5.25	0.237	-12.51	28.50	0.041	-27.74	56.50	0.025	-32.04	84.00	0.073	-22.73
5.50	0.180	-14.89	29.00	0.025	-32.04	57.00	0.026	-31.70	84.50	0.066	-23.61
5.75	0.116	-18.71	29.50	0.010	-40.00	57.50	0.033	-29.63	85.00	0.060	-24.44
6.00	0.052	-25.68	30.00	0.002	-53.98	58.00	0.041	-27.74	85.50	0.053	-25.51
6.25	0.026	-31.70	30.50	0.008	-41.94	58.50	0.049	-26.20	86.00	0.047	-26.56
6.50	0.081	-21.83	31.00	0.008	-41.94	59.00	0.055	-25.19	86.50	0.041	-27.74
6.75	0.133	-17.52	31.50	0.003	-50.46	59.50	0.058	-24.73	87.00	0.035	-29.12
7.00	0.176	-15.09	32.00	0.003	-50.46	60.00	0.057	-24.88	87.50	0.029	-30.75
7.25	0.206	-13.72	32.50	0.008	-41.94	60.50	0.054	-25.35	88.00	0.023	-32.77
7.50	0.224	-13.00	33.00	0.012	-38.42	61.00	0.046	-26.74	88.50	0.017	-35.39
7.75	0.228	-12.84	33.50	0.017	-35.39	61.50	0.036	-28.87	89.00	0.011	-39.17
8.00	0.220	-13.15	34.00	0.029	-30.75	62.00	0.024	-32.40	89.50	0.006	-44.44
8.25	0.203	-13.85	34.50	0.050	-26.02	62.50	0.011	-39.17	90.00	0.000	---
8.50	0.179	-14.94	35.00	0.075	-22.50	63.00	0.007	-43.10			
8.75	0.154	-16.25	35.50	0.101	-19.91	63.50	0.021	-33.56			

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