

Comprehensive Engineering Exhibit
Long Form Application
Facility ID 141051

This "Long Form" application requests a minor modification from the "Short Form" application BNPFT-20030314BWV technical section specifying a new transmit antenna and elevation with no change in location

The location is 95 meters above ground upon a tower identified by registration number 1044202. This multi-use tower also serves standard band station WTCR. Attached below, as Figure 1, is a spacing and overlap table at this location. From this table it can be determined that the proposed location is within the protected contour of third adjacent station WCMI-FM and a second-adjacent facility, WDGG. In Figure 2 it can be seen that WDGG, located 6.1 km from this proposal, presents a greater than 88 dBu contour signal in the area of the translator while WCMI-FM, located 5.9 km away presents only an 88 dBu contour. Because of the lower signal value of WCMI-FM, protection of its signal from interference will also protect WDCG. Thus the 128 dBu (88 + 40) contour becomes the value that will cause prohibited predicted interference and thus this value must not be achieved in habitable areas. Using the line of site calculation shown in Figure 3, with the proposed ERI A100, it has been determined that the field strength of 128 dBu will not include any habitable area. Reference to the image of Figure 4 further demonstrates this. Primary station WBVB has a 60 dBu service contour that completely encompasses that of the proposed, as also demonstrated in Figure 2.

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

The antenna system is to be a ERI A100 antenna, mounted 95 meters above ground level. This proposal will operate with a maximum effective radiated power of 0.250 kilowatt in the vertical and horizontal.

Using FM model set for a worst case "ring stub" antenna element, it has been determined that at 2 meters above ground, at 25.2 meters from the base of the tower, this proposal will contribute worst case 1.2 microwatts per square centimeter, or 0.12% of the allowable ANSI limit for controlled exposure, and 0.6% of the allowable limit for uncontrolled exposure. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

Further, 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 tower 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 pole for maintenance or inspection.

Figure 1. Spacing and Overlap Study

141051 ND at Site											
Capstar Tx Limited Partnership											
REFERENCE	CH#	227D - 93.3 MHz, Pwr= 0.25 kw, HAAT= 125.9 M, COR= 363 M								DISPLAY DATES	
38 24 44.0 N.		Average Protected F(50-50)= 14.4 km								DATA	03-18-13
82 36 12.0 W.		Omni-directional								SEARCH	03-18-13
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY	STATE	STATE	STATE	<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap	in km)
227D	632562	APP DC_		0.0	0.00	38 24 44.0	0.250	42.5	12.6	-59.1*	-65.9*
	Catlettsburg	KY		0.0	BNPFT20030314Bwv	82 36 12.0	126	338	Capstar Tx Limited Partner		
229C1	WDGG	LIC _CN		241.7	5.86	38 23 14.0	100.000	9.0	67.3	-17.7*<	-62.5*<
	Ashland	KY		61.6	BLH19860407KC	82 39 45.0	226	447	Fifth Avenue Broadcasting		
224A	WCMI-FM	LIC _C_		5.0	6.12	38 28 02.0	2.350	2.6	29.8	-12.6*<	-24.8*<
	Catlettsburg	KY		185.0	BMLH20030430ABK	82 35 50.0	162	372	Fifth Avenue Broadcasting		
227A	WKVW	LIC _CX		99.0	95.59	38 16 25.0	1.700	84.5	30.1	-6.2<	10.7
	Marmet	WV		279.6	BLED20100922ABA	81 31 27.0	189	498	Educational Media Foundati		
226C2	WDHR	LIC _C_		177.5	105.14	37 27 57.0	22.000	81.5	55.5	6.6	24.2
	Pikeville	KY		357.5	BLH20040917ABI	82 33 04.0	231	596	East Kentucky Broadcasting		
227B	WODC	LIC NCX		348.8	165.75	39 52 34.0	32.000	134.1	66.1	14.0	26.6
	Ashville	OH		168.6	BLH20061114ACH	82 58 49.0	184	413	Cc Licenses, Llc		
226A	WNTO	LIC _CX		38.6	76.56	38 56 56.0	4.100	46.7	30.8	15.7	24.4
	Racine	OH		219.0	BLH20060727AAE	82 03 02.0	121	334	Sunny Broadcasting, Llc		
227D	W227AX	LIC _C_		249.7	75.10	38 10 33.0	0.010	21.3	6.4	38.9	18.9
	Morehead	KY		69.2	BLFT20070518ADN	83 24 28.0	139	434	Radio Assist Ministry, Inc		
281C0	WNKE<	LIC ZCX		310.4	46.68	38 41 00.0	100.000	0.0	0.0	24.5R	22.2M
	New Boston	OH		130.1	BLED20110609AAI	83 00 46.0	450	676	Northern Kentucky Universi		
226A	AL2724	RSV-A		52.9	89.30	38 53 36.0	6.000	41.5	26.9	32.5	39.4
	Racine	OH		233.4	RM10597	81 46 52.0	100	319			
	change of community										
227B	WAKW	LIC DEX		298.1	191.12	39 12 19.0	50.000	138.5	67.3	37.0	56.1
	Cincinnati	OH		116.9	BMLH20061010ADL	84 33 23.0	150	366	Pillar of Fire		
228C2	WAXM	LIC _CN		188.8	168.26	36 54 50.0	2.450	80.2	53.8	72.5	91.2
	Big Stone Gap	VA		8.7	BLH19911016KB	82 53 40.0	574	1310	valley Broadcasting And Co		

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference zone= , Co to 3rd adjacent.
 All separation margins (if shown) include rounding
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside protected contour.
 < = Station meets FCC minimum distance spacing for its class.
 < = Contour Overlap

Figure 2. Contour Map

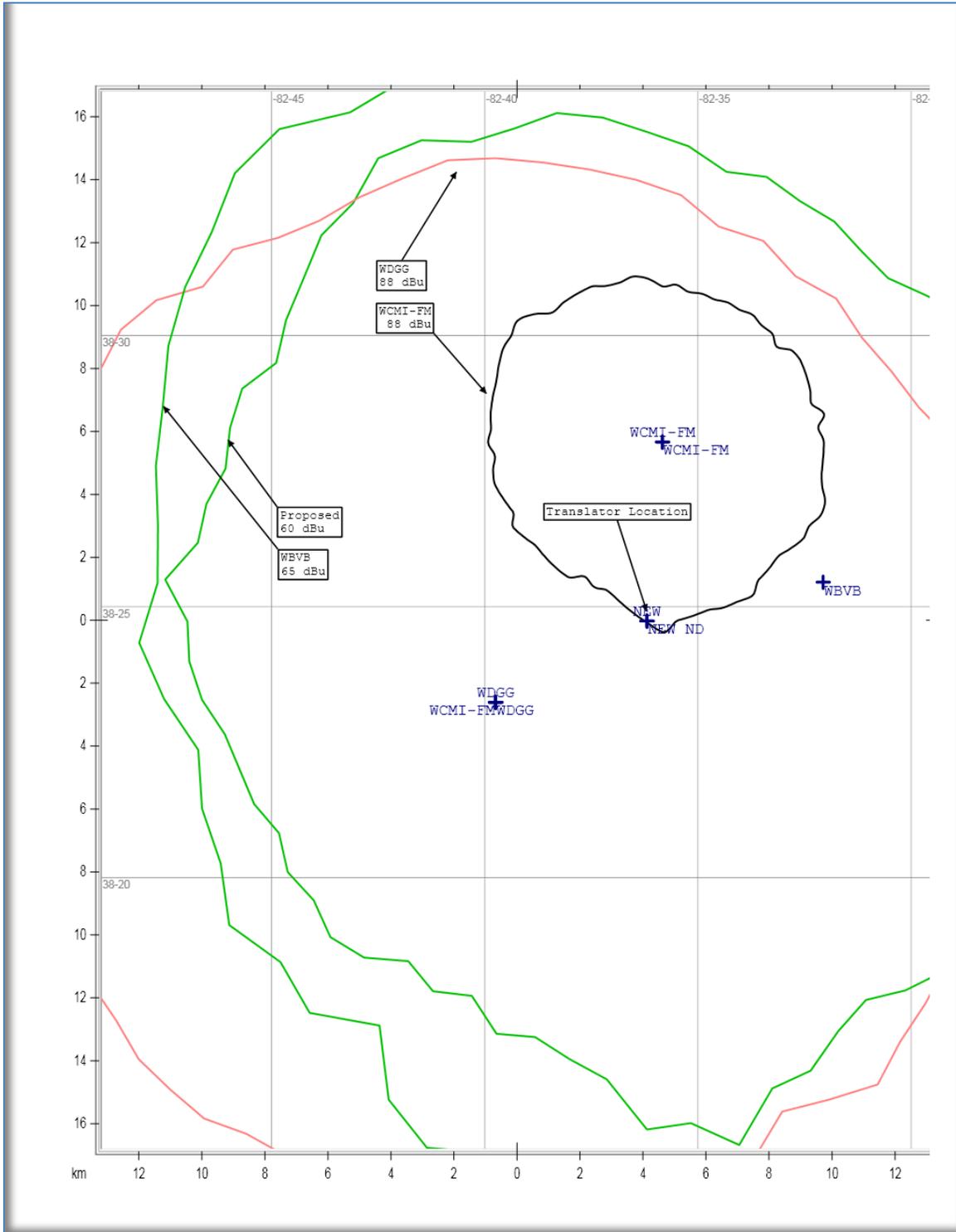


Figure 3. Distance to Contour Calculation

Proposed Antenna:	ERI A 100							
Proposed Power:	0.25	kW						
Antenna Height AGL:	95	meters						
Interference Contour:	128	f(50:10)						
Artificial Rcv Antenna Height:	2	meters						
Distance (Free Space) Equation:	$= (10^{((106.92 - [\text{desired dBu}] + [\text{ERP in dBk}]) / 20)}) * 1000$							
Field Strength (dBu) Equation	$= 106.92 - (20 * (\text{LOG}_{10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$							

Depression				Distance					
Angle	Antenna			from Ant.	Distance	Field Strength	Distance	Field Strength	
Below	Relative	ERP	ERP	to Interf	from Ant. to	in dBu @	from Ant.	in dBu @	
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level	
0°	1.000	0.250	-6.02	44.15 m	infinite	---	infinite	---	
-5°	0.960	0.230	-6.38	42.39 m	1067.06 m	99.98 dBu	1090.00 m	99.80 dBu	
-10°	0.845	0.179	-7.48	37.31 m	535.57 m	104.86 dBu	547.08 m	104.68 dBu	
-15°	0.669	0.112	-9.51	29.54 m	359.32 m	106.30 dBu	367.05 m	106.11 dBu	
-20°	0.455	0.052	-12.86	20.09 m	271.91 m	105.37 dBu	277.76 m	105.19 dBu	
-25°	0.226	0.013	-18.94	9.98 m	220.06 m	101.13 dBu	224.79 m	100.95 dBu	
-30°	0.006	0.000	-50.46	0.26 m	186.00 m	71.07 dBu	190.00 m	70.89 dBu	
-35°	0.204	0.010	-19.83	9.01 m	162.14 m	102.89 dBu	165.63 m	102.71 dBu	
-40°	0.339	0.029	-15.42	14.97 m	144.68 m	108.30 dBu	147.79 m	108.11 dBu	
-45°	0.445	0.050	-13.05	19.65 m	131.52 m	111.49 dBu	134.35 m	111.30 dBu	
-50°	0.506	0.064	-11.94	22.34 m	121.40 m	113.30 dBu	124.01 m	113.11 dBu	
-55°	0.525	0.069	-11.62	23.18 m	113.53 m	114.20 dBu	115.97 m	114.02 dBu	
-60°	0.511	0.065	-11.85	22.56 m	107.39 m	114.45 dBu	109.70 m	114.26 dBu	
-65°	0.472	0.056	-12.54	20.84 m	102.61 m	114.15 dBu	104.82 m	113.97 dBu	
-70°	0.416	0.043	-13.64	18.37 m	98.97 m	113.37 dBu	101.10 m	113.19 dBu	
-75°	0.343	0.029	-15.31	15.14 m	96.28 m	111.93 dBu	98.35 m	111.75 dBu	
-80°	0.277	0.019	-17.17	12.23 m	94.43 m	110.25 dBu	96.47 m	110.06 dBu	
-85°	0.202	0.010	-19.91	8.92 m	93.36 m	107.60 dBu	95.36 m	107.42 dBu	
-90°	0.126	0.004	-24.01	5.56 m	93.00 m	103.54 dBu	95.00 m	103.35 dBu	

Fill in "yellow" cells

Figure 4. View of Tower

