

**W286BK Comprehensive Engineering Exhibit**  
**Revised April 2011**

K276EL is seeking modification of its existing permit to allow relocation to a tower identified by ASR 1050337 where it is proposed to utilize a custom directional antenna at a location 160 meters above ground level, with 99 watts effective radiated power.

The facility will be utilized as a “fill-in” translator for primary station WERC-FM. The 60 dBu service contour of the proposed facility is within that of the primary station, as demonstrated in Figure 1. The 60 dBu contour of the facility as proposed overlaps the existing licensed facility, as is required for filing a minor modification application, and is demonstrated in Figure 1.

Attached as Figure 2 is an allocation spacing report wherein it can be seen that the proposed location is within the protected contour of the 2nd adjacent facilities of WERC which provides a signal of 92 dBu in the area of the tower base and WZZK which provides a 105 dBu signal at the tower base. Thus, WERC becomes the “limiting” station which must be protected from an interfering signal 40 dB stronger than its own. The +40 dB 132 dBu interference level contour, as determined by the line of site formula, extends at most 17.6 meters and thus does not reach the ground or any habitable space, thus this proposal complies with “Living Way”, and a request for waiver as needed is hereby made.

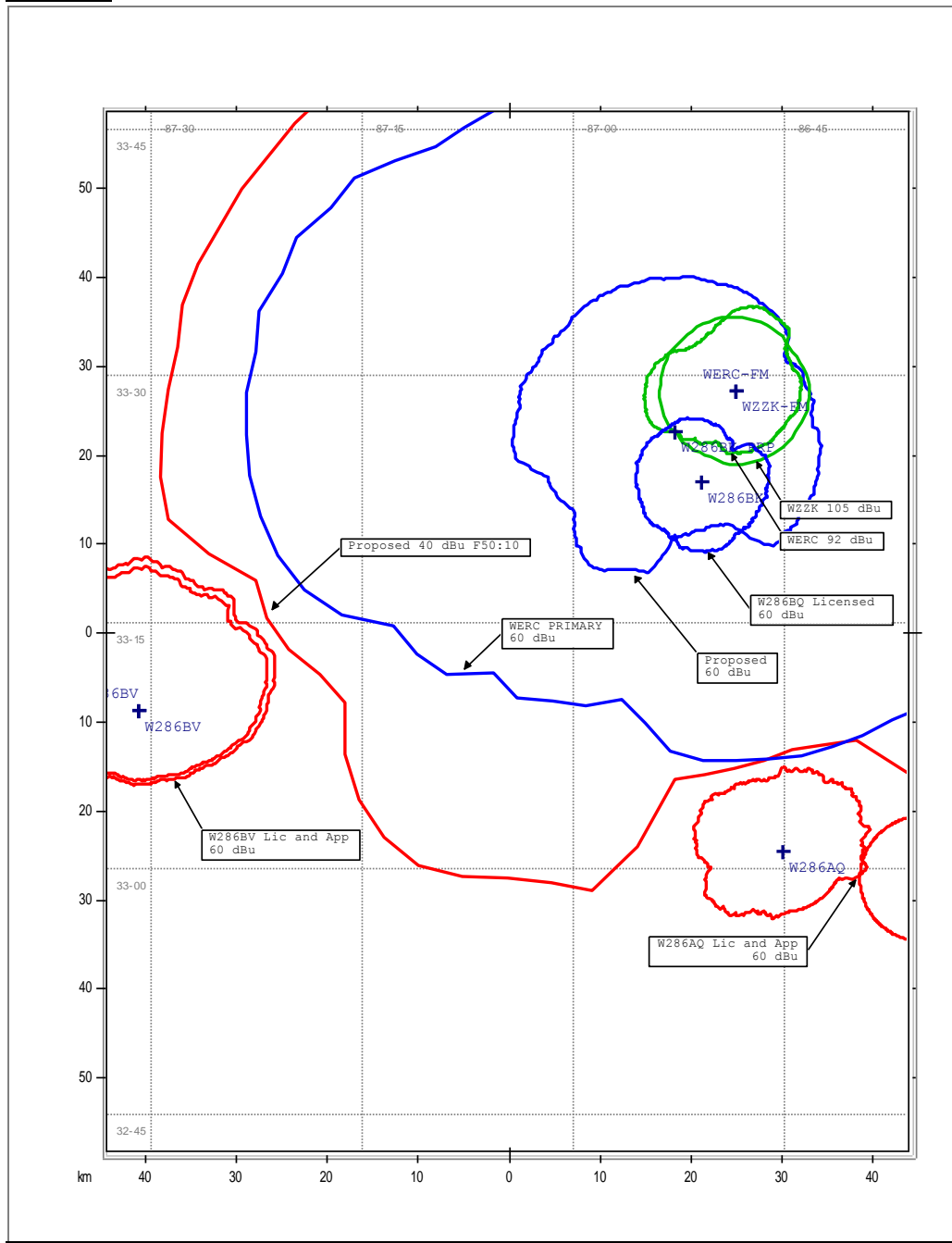
The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, “Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation.”

The proposed antenna system is ERI 100A circular polarity antenna located 160 meters above ground.. For purposes of this analysis the FM Model program has been set to calculate values for a “worst case” single element Ring-Stub antenna element, operated with an effective radiated power of 0.099 Kilowatts the vertical plane. At 2 meters above the surface, at 80 meters from the base of the tower, this proposal will contribute worst case, 0.4 microwatts per square centimeter, or 0.04 percent of the allowable ANSI limit for controlled exposure, and 0.2 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% of the applicable FCC exposure limit at all locations extending out from the base of the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5% of the applicable exposure limit. 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 site itself is restricted from public

access. 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 climb the tower for maintenance or inspection.

**Figure 1.**



**Figure 2. Spacing Study**

ComStudy 2.2 search of channel 286 (105.1 MHz Class D) at 33-26-37.6 N, 86-52-47.0 W.									
Callsign	Freq	Chanl	ERP_w	Class	Status	Dist_km	Sep	Clr	Notes
W286BK	105.1	286	10	D	LIC	6.37	0	-62.63 dB	This Fac
WZZK-FM	104.7	284	97800	C0	LIC	8.13	0	-46.50 dB	Living Way
WERC-FM	105.5	288	29500	C2	LIC	8.13	0	-35.19 dB	Living Way
WJOX-FM	94.5	233	50000	C0	LIC	3.48	25	-21.5	I.F. Limting
WJOX-FM	94.5	233	100000	C0	LIC	3.48	25	-21.5	I.F. Limting
W286BV	105.1	286	250	D	APP	67.02	0	-1.18 dB	Received Int. Only
W286AQ	105.1	286	218	D	LIC	48.73	0	0.57 dB	
W286BV	105.1	286	200	D	LIC	67.02	0	0.41 dB	
W286AQ	105.1	286	250	D	APP	57.41	0	1.87 dB	
WERC-FM*	105.5	288	0	C2	RSV	9.77	0	6.03 dB	
WQSB	105.1	286	2700	C3	LIC	110.61	0	6.18 dB	
W286AQ*	105.1	286	0	A	APP	77.55	0	10.48 dB	
	105.1	286	0	A	APP	96.51	0	14.43 dB	
WQSB	105.1	286	0	C2	RSV	111.76	0	18.34 dB	