

**Non-Ionizing Radiation Analysis  
Amendment Application**

**WPBI-LD  
Lafayette, IN  
October 5, 2016**

## Environmental Statement

### Site Environmental Issues

The proposed site for this digital television facility is an existing AM tower site. The AM radiator for WASK has been in existence and is properly lighted according to all FAA and FCC rules and regulations. The tower is less than 200 feet and did not require registration. This application proposes to use an Andrews ALP12L6-CSE-16 circularly polarized antenna with center of radiation at 50 meters above ground. The effective radiated power will be 15000 Watts directional at 308 Degrees True. For the purposes of this study, a worst case formula is used for the DTV facility. The form factor F for this antennas used in the formula is 0.2.

No external physical changes are being made to the site.

### OET Bulletin 65 Compliance

A worst case formula for the power density of an FM, DTV and TV stations is:

$$S = \frac{(33.4)F^2(ERP)}{R^2}$$

where:

S = highest power density in microwatts/sq.cm predicted at 2 meters above ground level

F = typical relative field factor in the downward direction (-60 to -90 elevation. For this calculation, F=0.2)

R = distance from 2 meters above ground to center of radiation in meters

ERP = Effective Radiated Power in watts

The WASK site was analyzed using Figure 2 from OST Bulletin 65a. The tower is fenced at no less than 2 meters from the base of the tower. At 2 meters from the base of the tower and at 2 meters above ground, the Mininec Model gives an electric field of 36 V/m. According to Table 1(B), 'Limits for General Population/Uncontrolled Exposure', the maximum allowed electric field is 568 V/m.

The following Table 1 was constructed based on the operating and proposed facilities at the WASK AM tower site.

Table 1

Station	Channel	Facility ID	File Number	Total Power (Watts)	Distance to 2 meters above ground (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Maximum Allowed Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percentage of Maximum Density (%)
WPBI-LD	16	184193	Application	30000	48	17.40	321.30	5.41
WASK*	1450 KHz	71065	BP-20150203ABQ	1000	2	36 V/m	568 V/m	6.34
							Total Sum of Percentages	11.75

\* 1 kW AM station. Protection based on field strength in V/m at 2 m above ground at a distance of 2 meters from the tower. See OET Bulletin 65a, Figure 2.

The total sum of the percentage power density of all pertinent facilities near the tower is less than the maximum allowed density based on uncontrolled area limits. The area will be clearly marked and access to the tower site limited to informed maintenance personnel.

Should the Commission require, the applicant will conduct measurements on this system to determine the non-ionizing radiation levels near the antenna site. Remedial steps will be taken if necessary to eliminate any human protection issues with this proposed installation. The applicant certifies that, in coordination with other users of the site, it will reduce power or cease operation as necessary to protect persons having access to the roof or top floor of the proposed site.

Copies of pertinent FCC document pages are attached to this document.




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Charles F. Ellis, PE  
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