

**DELAWDER COMMUNICATIONS, INC.**

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**ENGINEERING REPORT**

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**ENGINEERING STATEMENT—NEW LPFM APPLICATION**

Location : Columbia, MO (Site is in the city.)

Type of Support Structure for Antenna : Existing Tower

Coordinates: N 38-59-25.3; W 92-19-31.4

ASR : 1213288 (STR is 78 m AGL)

Ground Elevation (m AMSL) : 228.3

Antenna Centerline (m AGL) : 71.7 (300 m AMSL)

Antenna Centerline HAAT (m) : 72 Source: Globe

Maximum Allowed ERP (w) : 17 (FCC Form Calculator has maximum at w ERP)

FM CHANNEL : 281

Second Adjacent-channel Waiver Needed : N

Section 73.827 Requirement Met : Y

Third Adjacent-channel to Radio Reading Service : None

**ENVIRONMENTAL STATEMENT**

This proposal does not involve a site location specified under Section 1.1307(a) through (a)(8) of the FCC Rules.

The proposed FM antenna produces an ERP that is equal to or less than 17 watts (34 watts, with circular polarization). Assuming: (a) a maximum ERP of 34 watts; (b) a relative field of less than 0.3 in the critical downward angles; and (c) a distance of at least 60 meters from the lowest antenna element to 2 meters above ground level, the maximum power density is calculated as follows:

$$S = 33.4 (F)(F)(ERP) / [(R)(R)]$$

Where, S equals power density in uW/cm<sup>2</sup>  
F equals the relative field factor

ERP equals the effective radiate power in watts  
R equals the distance in meters

$$= 33.4 (0.3)(0.3)(34) / [(60)(60)]$$

$$= 1 \text{ uW/cm}^2, \text{ or less}$$

1 uW/cm<sup>2</sup> represents less than the uncontrolled power density limit (200 uW/cm<sup>2</sup>). The electromagnetic radiation from this proposed operation will not produce a value in excess of the radiation standard. The electromagnetic radiation from the proposed operation will not combine with other facilities on or near the structure to produce a significant change in value.

If this is a structure that may support various other operations, the applicant will cooperate with the other operators in establishing a plan for work done on the structure in close proximity to the existing antenna.