Hendersonville, North Carolina

Application for New FM Translator

File Number BNPFT-20030317GVQ

On Channel 300

by

Western North Carolina Public Radio, Inc.

Exhibit 17

Nonionizing Radiofrequency Radiation Analysis

March 2013

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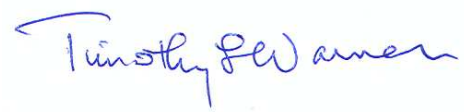
Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 17, Nonionizing Radiofrequency Radiation Analysis, for Western North Carolina Public Radio, Inc., and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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28 March 2013

Narrative

This Exhibit supports a long form application for a new FM translator, tech box file number BNPFT-20030317GVQ, CDBS application ID 649550, for Hendersonville, North Carolina. Translator 649550 is proposed on the tower of WFHC-LP, Hendersonville, North Carolina. This Exhibit shows that the proposed operation is in compliance with nonionizing radiofrequency electromagnetic radiation regulations.

FM Radiofrequency Calculations

Power density calculations were made using the procedures outlined in OET Bulletin No. 65[1]. Calculations are based on an elevation two (2) meters above ground level to show protection to a person standing at ground level. The following power density equation is used:

$$S(\text{mW/cm}^2) = \frac{334.098 \times \text{ERP}_{adj}(\text{Watts})}{D^2}$$

Where: ERP_{adj}(Watts) is the maximum Effective Radiated Power (Horizontally polarized plus vertically polarized, if applicable) times the vertical elevation pattern factor for the elevation in question

D is the distance in centimeters from the antenna radiation center to the calculation point

Radiofrequency Radiation Evaluation

The proposed 649550 facilities, when evaluated under worst case methods in OET-65, will create 0.668 mW/cm^2 two meters above ground level. A Shively 6812B-1 antenna is

[11] Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01, August 1997.

proposed which reduces the power density at ground level. When the elevation pattern is considered, the maximum level at 2 meters above ground level is 0.172 mW/cm^2 at 4.8 meters from the tower base, or 86% of the limit for general/uncontrolled exposure.

The authorized WFHC-LP facilities, when evaluated under worst case methods in OET-65, will create 0.104 mW/cm^2 two meters above ground level. This is 0.54% of the maximum permitted 0.20 mW/cm^2 for general population/uncontrolled exposure. A Dielectric DCR-L1antenna is in service which reduces the power density at ground level. When the elevation pattern is considered, the maximum level at 2 meters above ground level is 0.024 mW/cm^2 at 8 meters from the tower base, or 12% of the limit for general/uncontrolled exposure.

The elevation patterns of the two antennas were considered, and the power density plotted in Figure 1. The formula from OET-65 includes ground reflection.

The terrain around the transmitter site is wooded. Signs are posted at the base of the tower warning of the nature of the RF hazard.

As required for all broadcast facilities by §1.1307(b), the proposed facility complies with the maximum exposure limits in 47 C.F.R. §1.1310 TABLE 1.—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) both part (A) Limits for Occupational/Controlled Exposures and part (B) Limits for General Population/Uncontrolled Exposure. The evaluation was conducted using the procedures in OET Bulletin 65, Edition 97-01, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields.

Figure 1: Power Density at 2 meters above ground