WLPK AM Antenna Impedance Measurements

WLPK AM Connersville, IN

FIN: 57352

1580 KHz

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Introduction

The permittee/licensee for the W288CM Construction Permit (file number BMPFT-20141023AAC) is Educational Media Foundation (EMF). Per special operating condition #1, the construction permit authorizes the mounting of an antenna on the nondirectional tower of the AM station WLPK. During the installation of the antenna, the AM station shall determine operating power by the indirect method (see Section 73.51 of the Commission's Rules). Upon completion of the antenna installation, antenna impedance measurements on the AM antenna shall be made. If the resistance of the AM antenna has changed by more than 2 percent from the licensed value (see Section 73.45(c)(1) of the Commission's Rules), an application for the AM station to return to direct power measurement, including a tower sketch of the installation, shall be filed with the Commission by the AM station licensee using form FCC 302-AM. (See Section 1.30003 of the Commission's Rules.) The permittee must submit confirmation of completion of the requirements of this condition in the application for license to cover this construction permit.

The base impedance of the WLPK antenna was measured to be Z=51.0 + 178j prior to the installation of W288CM equipment. Once the W288CM equipment was installed impedance measurements were completed by WLPK personnel to determine if the resistance of the WLPK antenna had varied by more than two percent. Measurements were completed using a Delta Electronics OIB Impedance Bridge, and final power determined using the indirect method.

Equipment

- Delta Electronics OIB Impedance Bridge

Summary

The final WLPK antenna base impedance was measured to be Z=51.2R+178j. The final current for 245 Watts day time power is 2.1875 Amps. The final current for 5 watts night time power is 0.3125 Amps.

The WLPK antenna resistance has not varied by more than two percent. Therefore, all Special Operating Conditions of the W288CM Construction Permit (FCC File Number BMPFT-20141023AAC) have been met.

Indirect Power Confirmation

WLPK Antenna Resistance: 51.2 Ohms
Day Time Power: 245 Watts
Night Time Power: 5 Watts
Day Time Current: 2.1875 Amps
Night Time Current: 0.3125 Amps

Day Time Power Confirmation: $2.1875^2(51.2) = 245\ Watts$

Night Time Power Confirmation: $0.3125^2(51.2) = 5\ Watts$