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**PENN-JERSEY EDUCATIONAL RADIO CORPORATION**

**LICENSEE OF WDVR(FM)**

**CHANNEL 209**

**DELAWARE TOWNSHIP, NEW JERSEY**

**FCC Facility ID #52174**

**FCC FILE No. BLED-19990603KA**

**MINOR CHANGE**

**APPLICATION FOR MODIFICATION OF LICENSE**

**TO SPECIFY A NEW TOWER, HAAT, AND ERP**

**ENGINEERING EXHIBIT 22**

**March 21, 2007**

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**ENGINEERING EXHIBIT 22**

**1. FACILITIES REQUESTED**

The instant minor application proposes to change the antenna supporting structure location and height, and the antenna C/R AMSL and HAAT, and the effective radiated power. Specifically we propose to relocate WDVR(FM) to a new 180 foot (54.9M) AG tower at 40-30-36 N, 074-57-34 W (NAD27), utilizing an ERP of 3.8 kW (V) and 0.0063 kW (H), with a C/R at 221 meters AMSL, 50 meters AG, 111 meters HAAT, and with an overall structure height of 54.9 meters. The proposed antenna is an ERI Model P300-3A-DA full wavelength spaced 3 bay elliptically polarized antenna with an elevation power gain of 3.0.

**1. ENVIRONMENTAL CONSIDERATIONS**

**a) NEPA CHECKLIST**

The instant application is not excluded under 1.1306. The applicant is attempting to satisfy all steps of the NEPA Checklist. Notification was provided through the FCC

WTB website on December 26, 2006. As of the date of this filing, we have not heard back from the NJ SHPO and, because of that, we have not completed the process with the only native American THPO that has responded to our notification. Work continues on these items. All other pertinent items of the NEPA checklist have been addressed through either the NJ Department of Environmental Protection or as noted below. The facility is not located in a floodplain, is not equipped with High Intensity Strobe Lighting, and does not exceed FCC guidelines on RFR energy as outlined below.

### **b) RFR STUDY**

Using the procedures outlined in OET Bulletin 65, Edition 97-01 and specifically Equation 10, I have evaluated the RFR energy from the antenna system of proposed WDVR(FM) as follows:

The proposed WDVR(FM) is the only broadcast antenna at the tower location required to be considered by 47 CFR 1.1307(b).

#### **WDVR(FM)**

WDVR(FM), Channel 209, is proposing to utilize an ERP of 3.8 kilowatts (V) and 0.0063 kW (H). The proposed WDVR(FM) transmitting antenna is an ERI Model P300-3A-DA 3 bay full wavelength spaced unit with an elevation power gain of 3x side mounted with a base approximately 47 meters up the tower. Because of the elevation gain, the ERP at angles departing +/- 35 degrees from the horizon is attenuated by a minimum of 6 dB. For occupational/controlled environment (1.0 mW/cm<sup>2</sup> at 89 MHz) and utilizing Equation 10 of OET Bulletin 65 and allowing for 6 dB at steep angles, the required physical separation is 5.6 meters. For general population/uncontrolled environment (0.20 mW/cm<sup>2</sup>), the required physical spacing is 12.6 meters. Since the bottom of the antenna is approximately 47 meters above the ground, the height of the structure limits the possible excessive radiation values to at least 34.4 meters above the ground. Again using Equation 10 of OET Bulletin 65, and using the total average RF power corrected for steep angles, the *actual RF level at 2 meters above the ground from WDVR(FM) is 15.7 uW/cm<sup>2</sup> or 7.8 % of the total allowable at 89 Mhz.* The WDVR(FM)

antenna delivers less than 8 % of the general public/uncontrolled environment permissible RFR energy at ground level at this site.

## **CONCLUSIONS ON RFR ANALYSIS**

Based on the calculations included herein, I believe that the site will be in compliance with 47 CFR 1.1307 and FCC OET Bulletin 65.

To prevent unauthorized access, the proposed antenna supporting structure will be enclosed by a chain-link fence. As a precaution to employees, a suitable sign is posted at the base of the tower alerting maintenance personnel to the presence of RFR energy so that appropriate action can be taken when access on the tower is required.

Also, at present, the broadcast transmitter on the site is owned by the applicant. The applicant further states that he is a party to an electromagnetic radiation abatement plan to educate employees and workers as to the potential hazards when working on the tower. During periods of maintenance where workers on the tower could be exposed to excessive levels of RFR energy, any transmitting system that could pose a hazard will be either turned off or reduced in power to insure that workers are not subject to excessive values of non-ionizing radiation. A suitable RFR energy warning sign will be placed at the base of the tower.

With these procedures in place, we believe the proposed WDVR(FM) operation is in compliance with the RFR exposure requirements of 47 CFR 1.1307(b).

## **2: NEARBY AM FACILITY**

Per a search on AM Query, there is one AM station within 3.2 km of the proposed WDVR(FM) transmitter site. It is WCHR, 1070 KHz located 1.7 km at a bearing of 249.83 degrees. The applicant will take the necessary steps per 73.1692 to protect WCHR.

## **BLANKETING INTERFERENCE**

The area surrounding the proposed site is rural residential, however due to the wide frequency separations, no blanketing interference is anticipated. However, the applicant will

investigate and cure any complaints reported within the blanketing area. No intermodulation interference is expected.

#### **4. FAA NOTIFICATION**

The FAA has been notified of this proposal and has issued a Determination of No Hazard, FAA Study 2006-AEA-5591-OE. FCC Form 854R has been completed.