

**AMEND BMPH-20010213AAZ**  
**EAST CAROLINA RADIO OF**  
**ELIZABETH CITY, INC.**  
**WOBX-FM RADIO STATION**  
**CH 251C2 - 98.1 MHZ - 40.0 KW**  
**MANTEO, NORTH CAROLINA**  
**April 2001**

**EXHIBIT A**

**Radio Frequency and Environmental Assessment**

Due to the proposed co-location of WOBX-FM with another high power FM facility (on a short tower) and numerous LPTV proposals, the radio frequency radiation worksheets associated with FCC Form 301 could not be used to verify compliance with the Commission's rules. Therefore, a study has been made to determine whether this proposal is in compliance with 47 C.F.R. §1.1307 of the Commission's rules and with OET Bulletin #65, dated August 1997 ("Bulletin"), regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby stations and utilizes the appropriate formulas contained in the Bulletin.

**Environmental Analysis**

The proposed WOBX-FM tower location does not involve the use of high intensity white lighting (strokes) in a residential neighborhood. The structure is not located in an officially designated wilderness area or wildlife preserve, nor does it threaten the existence or habitat of endangered species. The facility does not affect districts, sites, buildings, structures or objects significant in American history, architecture, archaeology, engineering or culture that are listed in the National Register of Historic Places, or are eligible for listing, nor does it affect Indian religious sites. Further, the site is not located in a floodplain and did not, to the knowledge of the applicant, require significant change in surface features (wetland fill, deforestation or water diversion) at the time of construction.

## **Radio Frequency Radiation Study**

This radio frequency radiation study is being conducted to determine whether this proposal is in compliance with OET Bulletin Number 65, dated August 1997, regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. This study considers all nearby contributing stations, specifically the co-located WOBX, WOBR-FM and six pending applications for LPTV stations (CH 17, CH 28, CH 45, CH 51, CH 56 and CH 59), and utilizes the appropriate formulas contained in the OET Bulletin.<sup>1</sup>

The proposed WOBX-FM six bay antenna system will be mounted with its center of radiation 70.1 meters (230.0 feet) above the ground at the base of the tower and operate with an effective radiated power of 40.0 kilowatts in the horizontal and vertical planes (circularly polarized). The proposed WOBX-FM antenna will be a Jampro Double V antenna, Model JHPC-6 (FCC Type #2). The WOBX-FM antenna system will contribute 0.064 mw.<sup>2</sup> Based on exposure limitations for a controlled environment, 6.4% of the allowable ANSI limit is reached at two meters above the ground at the base of the proposed tower. For uncontrolled environments, 32.0% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The co-located WOBR-FM six bay antenna system is mounted with its center of radiation 88.7 meters (291.0 feet) above the ground at the base of the tower and operates with

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- 1) The contributions of the FM facilities were calculated using the FMModel program. The actual antennas and number of bays were used to determine the contributions of the FM stations.
  - 2) This level of field occurs 20.0 meters out from the base of the tower and is considered worst case for RFR calculations.

an effective radiated power of 25.0 kilowatts in the horizontal and vertical planes (circularly polarized). The authorized WOBR-FM antenna is a Harris Corp./Electronics Research, Inc.,

Model FML-6E (FCC Type #3). The WOBR-FM antenna system contributes 0.0151 mw.<sup>3</sup>

Based on exposure limitations for a controlled environment, 1.5% of the allowable ANSI limit is reached at two meters above the ground at the base of the proposed tower. For uncontrolled environments, 7.6% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The co-located WOBX AM facility operates on 1530 kHz with a nominal power of 1.0 kilowatt, with a two tower directional antenna system. All of the other service antennas (LPTV facilities and both FM facilities) are or will be located on the 179.1° tower (which approaches a ½ wavelength tower). Following installation of the herein proposed WOBX-FM antenna, a fence will be installed a minimum of 3.0 meters out from the base of the tower. At this distance, the WOBX radiator contributes 105 V/m or 0.058 A/m. Due to the operating frequency, the limitations for uncontrolled environments are more restrictive than the controlled. Therefore, the uncontrolled were evaluated and considered worst case. The WOBX radiator contributes 19.5% of the electric field and 4.1% of the magnetic field. Since the electric field is the higher percentage, it is, therefore, considered worst case.

All of the proposed LPTV antenna systems will be mounted with their center of radiation at 70.1 meters (230.0 feet) above the ground at the tower location and will each operate with an effective radiated power of 11.5 kilowatts in the horizontal plane. As denoted in OET Bulletin Number 65, Supplement A, Page 31, the typical UHF antenna has a downward relative field of less than 0.1. Therefore, the contribution of each LPTV antenna system is based on a field of 1 or 115 watts. At two meters, the height of an average person, above the ground at the base

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3) This level of field occurs at 28.0 meters out from the base of the tower and is considered worst case for RFR calculations.

of the proposed tower, each of the proposed antenna systems contributes 0.0005 mw. Based on exposure limitations for a controlled environment, <0.1% of the allowable ANSI limit is reached at two meters above the ground at the base of the proposed tower. For uncontrolled environments, no more than 0.2% of the ANSI limit is reached at two meters above the ground at the base of the tower.<sup>4</sup> Therefore, the maximum contribution of all six LPTV stations, in the uncontrolled environment, is 1.2%.

Combining the contributions of the proposed WOBX-FM, WOBX, WOBR-FM and the six LPTV stations, a total of 60.3% of the limit for uncontrolled environments is reached at the base of the tower. Since this level for uncontrolled environments is below the 100% limit defined by the Commission, the proposed WOBX-FM facility is believed to be in compliance with the radio frequency radiation exposure limits as is required by the Federal Communications Commission. Further, East Carolina Radio of Elizabeth City, Inc. (“ECREC”) will post warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, ECREC will reduce the power of the proposed facility or cease operation, in cooperation and coordination with other tower users, as necessary, to protect persons having access to the site, tower or antenna from radio frequency radiation in excess of FCC guidelines. Based on the above factors, this proposal is categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

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4) The percentage of the LPTV stations’ contributions for uncontrolled areas changes slightly with the channel under study. However, 0.2% was the highest for all six channels and is, therefore, considered worst case.