MODIFY BPEDT-20000425AAO
MID-SOUTH PUBLIC
COMMUNICATIONS FOUNDATION
WKNO TELEVISION STATION
CH 29 DTV - 835 KW
MEMPHIS, TENNESSEE
November 2002

EXHIBIT B

Radio Frequency and Environmental Assessment

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 existing tower on which the WKNO DTV facility is to be located does not involve the use of high intensity white lighting (strobes) 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 flood plain and did not, to the knowledge of the licensee, 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 co-located FM stations WQOX, WRVR-FM, WSRR-FM and WGKX[4] and analog TV station WKNO-TV, as well as a pending application for a new TV station ("Channel 56"), and utilizes the appropriate formulas contained in the OET Bulletin.[5]

The WKNO-DT Channel 29 antenna system will be mounted with its center of radiation 311.0 meters (1,020.6 feet) above the ground at the existing tower location and operate with an effective radiated power of 835 kilowatts in the horizontal plane. As denoted in OET Bulletin #65, Supplement A, Page 31, the typical UHF antenna system has a downward radiation field of 0.1. As such, the WKNO-DT antenna system radio frequency radiation calculations were made based on an effective radiated power of 8.35 kilowatts. At two meters, the height of an average person, above the ground at the base of the tower, the WKNO-DT antenna system will contribute 0.0018 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 tower. For uncontrolled environments, 0.5% of the ANSI limit is reached at two meters above the ground at the base of the tower.

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4) The contributions of the FM stations were calculated using the FMModel program. The EPA dipole antenna was used for RFR calculations, unless otherwise noted.

5) The licensed antenna system for TV station WLMT, Channel 30, Memphis, Tennessee, has been removed from this location and is, therefore, no longer operational at this site.

The proposed WKNO-TV Channel 10 antenna system is mounted with its center of radiation 312.3 meters (1,024.7 feet) above the ground at the existing tower location and operates with an effective radiated power of 316 kilowatts in the horizontal plane.[6] As denoted in OET Bulletin #65, Supplement A, Page 29, the typical VHF antenna system has a downward radiation field of 0.2. As such, the WKNO-TV antenna system radio frequency radiation calculations were made based on an effective radiated power of 12.64 kilowatts. At two meters, the height of an average person, above the ground at the base of the tower, the WKNO-TV antenna system will contribute 0.0026 mw. Based on exposure limitations for a controlled environment, 0.3% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 1.3% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The proposed new Channel 56 antenna system will be mounted with its center of radiation 296.9 meters (974.1 feet) above the ground at the existing tower location and will operate with an effective radiated power of 65.0 kilowatts in the horizontal plane. At two meters, the height of an average person, above the ground at the base of the tower, the Channel 56 antenna system will contribute 0.0155 mw. Based on exposure limitations for a controlled environment, 0.6% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 3.2% of the ANSI limit is reached at two meters above the ground at the base of the tower.

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6) Mid-South will be submitting an application for minor changes in the facilities of WKNO-TV, based on the proposed replacement of the existing WKNO-TV antenna with a new system which will handle the transmission of both WKNO-TV and WKNO-DT. Therefore, the proposed height of the WKNO-TV antenna is used for this review. Further, the licensed WKNO antenna is presently higher than the proposed elevation and, as such, the proposed antenna is considered the worst case situation.

The authorized WSRR-FM seven bay antenna system is mounted with its center of radiation 256.0 meters (840.0 feet) above the ground at the existing tower location and operates with an effective radiated power of 100.0 kilowatts in the horizontal and vertical planes (circularly polarized). The WSRR-FM antenna is a Shively Labs Model 6814 (FCC Type #6). At two meters, the height of an average person, above the ground at the base of the tower, the WSRR-FM antenna system will contribute 0.0047 mw.[7] Based on exposure limitations for a controlled environment, 0.5% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 2.4% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The WQOX six bay antenna system is mounted with its center of radiation 121.9 meters (400.0 feet) above the ground at the existing tower location and operates with an effective radiated power of 30.0 kilowatts in the horizontal and vertical planes (circularly polarized). At two meters, the height of an average person, above the ground at the base of the tower, the WQOX antenna system contributes 0.0800 mw.[8] Based on exposure limitations for a controlled environment, 8.0% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 40.0% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The WRVR-FM eight bay antenna system is mounted with its center of radiation 219.9 meters (721.4 feet) above the ground at the existing tower location and operates with an effective

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7) This level of field occurs at 80.0 meters out from the base of the tower and is considered worst case.

8) This level of field occurs at 20.8 meters out from the base of the tower and is considered worst case.

radiated power of 100.0 kilowatts in the horizontal and vertical planes (circularly polarized). The WRVR-FM antenna is an ERI rototiller series antenna (FCC Type #3). At two meters, the height of an average person, above the ground at the base of the tower, the WRVR-FM antenna system contributes 0.0082 mw.[9] Based on exposure limitations for a controlled environment, 0.8% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 4.1% of the ANSI limit is reached at two meters above the ground at the base of the tower.

The WGKX six bay antenna system is mounted with its center of radiation 290.8 meters (954.4 feet) above the ground at the existing tower location and operates with an effective radiated power of 100.0 kilowatts in the horizontal and vertical planes (circularly polarized). The WGKX antenna is an ERI rototiller series antenna (FCC Type #3). At two meters, the height of an average person, above the ground at the base of the tower, the WGKX antenna system contributes 0.0054 mw.[10] Based on exposure limitations for a controlled environment, 0.5% of the allowable ANSI limit is reached at two meters above the ground at the base of the tower. For uncontrolled environments, 2.7% of the ANSI limit is reached at two meters above the ground at the base of the tower.

Combining the contributions of WKNO-DT, WKNO-TV, Channel 56, WSRR-FM, WQOX, WRVR-FM, and WGKX, a total of 54.2% of the limit is reached at two meters above the ground at the base of the tower. Since this level for uncontrolled environments is below the

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9) This level of field occurs at 59.2 meters out from the base of the tower and is considered worst case.

10) This level of field occurs at 92.8 meters out from the base of the tower and is considered worst case.

100% limit defined by the Commission, the proposed WKNO-DT facility is believed to be in compliance with the radio frequency radiation exposure limits as required by the Federal Communications Commission. Further, Mid-South Public Communications Foundation ("Mid-South") will insure that warning signs in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, Mid-South 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 rule