

RELICENSE MAIN AS AUXILIARY
WDAS LICENSE LIMITED PARTNERSHIP
WRDW-FM RADIO STATION
CH 243B - 96.5 MHZ - 15.2 KW
PHILADELPHIA, PENNSYLVANIA
June 2007

EXHIBIT C

Radio Frequency Assessment

Since the WRDW-FM auxiliary antenna is mounted on an existing tower on which numerous FM and TV antennas are located, 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 contributing stations, specifically FM stations WXTU, WBEB, WRTI, WMGK and WBEN-FM, and TV stations WPHA-CA, WELL-LP, WPSG, WFPA-CA, WTXF-TV and WTXF-DT¹, and it utilizes the appropriate formulas contained in the OET Bulletin.²

The WRDW-FM auxiliary antenna system is mounted with its center of radiation 256 meters (839.9 feet) above the ground at the tower location and operates with an effective radiated power of 15.2 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters, the height of an average person, above the ground at the base of the existing tower, the WRDW-FM auxiliary antenna system contributes 0.0095 mw/cm^2 ³ Based on exposure

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- 1) Some of the facilities are located on towers within 315 meters of the WRDW-FM site. They are considered co-located for the purposes of this review.
 - 2) The contributions of the FM facilities were calculated using the FMModel program. A single bay EPA dipole antenna was used for calculation purposes, unless otherwise stated.
 - 3) This level of field occurs at 68.0 meters out from the base of the tower and is considered worst case.

limitations for a controlled environment, 1.0% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 4.8% of the limit is reached at 2.0 meters above the ground at the base of the tower.

The WXTU antenna system is mounted with its center of radiation 267 meters (876.0 feet) above the ground at the tower location and operates with an effective radiated power of 15.0 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the existing tower, the height of an average person, the WXTU antenna system contributes 0.0086 mw/cm^2 .⁴ Based on exposure limitations for a controlled environment, 0.9% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 4.3% of the limit is reached at 2.0 meters above the ground at the base of the tower.

The WBEB antenna system is mounted with its center of radiation 280 meters (918.6 feet) above the ground at the existing tower location and operates with an effective radiated power of 14.0 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the existing tower, the height of an average person, the WBEB antenna system contributes 0.0073 mw/cm^2 .⁵ Based on exposure limitations for a controlled environment, 0.7% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 3.7% of the limit is reached at 2.0 meters above the ground at the base of the tower.

4) This level of field occurs at 71.0 meters out from the base of the tower and is considered worst case.

5) This level of field occurs at 75.0 meters out from the base of the tower and is considered worst case.

The WRTI antenna system is mounted with its center of radiation 300 meters (984.3 feet) above the ground at the tower location and operates with an effective radiated power of 12.5 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the existing tower, the height of an average person, the WRTI antenna system contributes 0.0057 mw/cm^2 .⁶ Based on exposure limitations for a controlled environment, 0.6% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 2.9% of the limit is reached at 2.0 meters above the ground at the base of the tower.

The WMGK antenna system is mounted with its center of radiation 342 meters (1,122.0 feet) above the ground at the proposed tower location and operates with an effective radiated power of 8.9 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0 meters above the ground at the base of the existing tower, the height of an average person, the WMGK antenna system contributes 0.0031 mw/cm^2 .⁷ Based on exposure limitations for a controlled environment, 0.3% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 1.6% of the limit is reached at 2.0 meters above the ground at the base of the tower.

The WBEN-FM antenna system is mounted with its center of radiation 342 meters (1,122.0 feet) above the ground at the proposed tower location and operates with an effective radiated power of 8.9 kilowatts in the horizontal and vertical planes (circularly polarized). At 2.0

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

7) This level of field occurs at 91.0 meters out from the base of the tower and is considered worst case.

meters above the ground at the base of the existing tower, the height of an average person, the WBEN-FM antenna system contributes 0.0031 mw/cm^2 .⁸ Based on exposure limitations for a controlled environment, 0.3% of the allowable limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 1.6% of the limit is reached at 2.0 meters above the ground at the base of the tower.

The WPHA-CA Channel 38- antenna system is mounted with its center of radiation 213 meters (698.8 feet) above the ground at the existing tower location and operates with an effective radiated power of 40.0 kilowatts in the horizontal plane. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WPHA-CA antenna system contributes 0.0186 mw/cm^2 . Based on exposure limitations for a controlled environment, 0.9% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 4.5% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WELL-LP Channel 45+ antenna system is mounted with its center of radiation 330.2 meters (1,083.3 feet) above the ground at the existing tower location and operates with an effective radiated power of 50 kilowatts in the horizontal plane. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WELL-LP antenna system contributes 0.0096 mw/cm^2 . Based on exposure limitations for a controlled environment, 0.4% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

8) This level of field occurs at 91.0 meters out from the base of the tower and is considered worst case.

For uncontrolled environments, 2.2% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WPSG Channel 57Z antenna system is mounted with its center of radiation 351 meters (1,151.6 feet) above the ground at the existing tower location and operates with an effective radiated power of 3,470 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 WPSG antenna system radio frequency radiation calculations were made based on an effective radiated power of 34.7 kilowatts. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WPSG antenna system contributes 0.0059 mw/cm². Based on exposure limitations for a controlled environment, 0.2% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 1.2% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WFLA-TV Channel 28+ antenna system is mounted with its center of radiation 226 meters (741.5 feet) above the ground at the existing tower location and operates with an effective radiated power of 10.9 kilowatts in the horizontal plane. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WFLA-TV antenna system contributes 0.0045 mw/cm². Based on exposure limitations for a controlled environment, 0.2% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For

uncontrolled environments, 1.2% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WTXF-DT Channel 42 antenna system is mounted with its center of radiation 276.4 meters (906.8 feet) above the ground at the existing tower location and operates with an effective radiated power of 1,000.0 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 WTXF-DT antenna system radio frequency radiation calculations were made based on an effective radiated power of 10.0 kilowatts. At 2.0 meters above the ground at the base of the tower, the height of an average person, the WTXF-DT TV antenna system contributes 0.0018 mw/cm². Based on exposure limitations for a controlled environment, 0.1% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 0.4% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

The WTXF-TV Channel 29Z antenna system is mounted with its center of radiation 338 meters (1,108.9 feet) above the ground at the existing tower location and operates with an effective radiated power of 5,000.0 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 WTXF-TV antenna system radio frequency radiation calculations were made based on an effective radiated power of 50.0 kilowatts. At 2.0 meters above the ground at

the base of the tower, the height of an average person, the WTXF-TV antenna system contributes 0.0092 mw/cm². Based on exposure limitations for a controlled environment, 0.5% of the allowable ANSI limit is reached at 2.0 meters above the ground at the base of the tower. For uncontrolled environments, 2.5% of the ANSI limit is reached at 2.0 meters above the ground at the base of the tower.

Combining the contributions of the WXTU, WBEB, WRTI, WMGK WBEN-FM, WPHA-CA, WELL-LP, WPSG, WFPD-CA, WTXF-TV and WTXF-DT, a total of 30.9% of the limit for uncontrolled environments is reached at 2.0 meters above the ground at the base of the tower. Since this level is below the 100% limit defined by the Commission, the WRDW-FM auxiliary facility is believed to be in compliance with the radio frequency radiation exposure limits as required by the Federal Communications Commission. Further, WLLP will insure warning signs are posted in the vicinity of the tower warning of potential radio frequency radiation hazards at the site. In addition, WLLP 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.