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THE UNIVERSITY OF NORTH CAROLINA

LICENSEE OF W46AX

BRYSON CITY, NORTH CAROLINA

FAC ID# 69123

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APPLICATION FOR A CONSTRUCTION PERMIT FOR

A DIGITAL FLASH CUT FOR W46AX

(MINOR CHANGE)

ENGINEERING EXHIBIT 12

May 11, 2007

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THE UNIVERSITY OF NORTH CAROLINA
RESEARCH TRIANGLE PARK, NC
APPLICATION FOR A DIGITAL FLASH CUT FOR
W46AX
(MINOR CHANGE)

EXHIBIT 12 – RFR STATEMENT

There are no AM stations within 3.2 km of the proposed W46AX channel site. The instant application is excluded under 1.1306. There are no physical changes proposed to the existing pre 1986 tower or immediate surrounding area. Using the procedures outlined in OET Bulletin 65, Edition 97-01 and specifically Appendix A, Table 1 and Equation 10, Page 21, I have evaluated the RFR energy from the antenna system of W46AX as follows:

Proposed W46AX is one of 3 operating stations at this general location required to be considered by 47 CFR 1.1307(b). They are W46AX, W08AN, and W234AS.

W46AX: W46AX is proposing digital operation on Channel 46 utilizing a maximum average digital ERP of 0.5 kilowatts with a non-directional antenna and horizontal polarization. This proposed operation will replace the existing W46AX analog operation on CH 46 so that operation is not considered here. The Channel 46 transmitting antenna is a high gain unit with an elevation power gain of 10x side mounted with a C/R 33 meters up the tower. With the resulting high elevation gain, the RFR energy at steep angles below the horizon are expected to be at least

10 dB below that of the main lobe. Utilizing Appendix A, Table 1 the maximum occupational/controlled exposure level at CH 46 is 2217 uW/cm^2 . Using Equation 10, Page 21, the distance to the 2217 uW/cm^2 contour is 0.9 meter. For general population/uncontrolled environment the maximum exposure level is 443 uW/cm^2 . Again using Equation 10, Page 21, the distance to the 443 uW/cm^2 contour is 1.9 meters. Since the base of the antenna is approximately 31 meters above ground, the height of the structure limits the possible excessive RFR levels to at least 29.1 meters above ground. Again using Equation 10, the predicted RFR energy levels at 2 meters above ground is calculated at 2.3 uW/cm^2 or 0.5% of the FCC OET 65 allowable RFR energy exposure for the general population/uncontrolled environment. Proposed W46AX is calculated to contribute less than 5% of the total allowable general public/uncontrolled RFR energy level at ground level.

W08AN: W08AN is operating on Channel 8 utilizing a maximum peak visual ERP of 0.015 kilowatts and 0.0015 aural (total average power of 11 watts) with a directional antenna and horizontal polarization. The Channel 8 transmitting antenna is a high gain unit with an elevation power gain of at least 6x side mounted with a C/R 15 meters up the tower. With the resulting high elevation gain, the RFR energy at steep angles below the horizon are expected to be at least 6 dB below that of the main lobe. Utilizing Appendix A, Table 1 the maximum occupational/controlled exposure level at CH 8 is 1000 uW/cm^2 . Using Equation 10, Page 21, the distance to the 1000 uW/cm^2 contour is 0.6 meter. For general population/uncontrolled environment the maximum exposure level is 200 uW/cm^2 . Again using Equation 10, Page 21, the distance to the 200 uW/cm^2 contour is 1.4 meters. Since the base of the antenna is approximately 11 meters above ground, the height of the structure limits the possible excessive RFR levels to at least 9.6 meters above ground. Again using Equation 10, the predicted RFR energy levels at 2 meters above ground is calculated at 4.5 uW/cm^2 or 2.3% of the FCC OET 65 allowable RFR energy exposure for the general population/uncontrolled environment. W08AN is calculated to contribute less than 5% of the total allowable general public/uncontrolled RFR energy level at ground level.

W234AS: W234AS is operating on Channel 234 utilizing a maximum ERP of 0.01 kilowatts with a non-directional antenna and circular polarization. The Channel 234 transmitting antenna

is a low gain unit with an elevation power gain of 1x side mounted with a C/R 15 meters up the tower. With the resulting low elevation gain, the RFR energy at steep angles below the horizon are expected to be 0 dB below that of the main lobe. Utilizing Appendix A, Table 1 the maximum occupational/controlled exposure level at CH 234 is 1000 uW/cm^2 . Using Equation 10, Page 21, the distance to the 1000 uW/cm^2 contour is 0.8 meter. For general population/uncontrolled environment the maximum exposure level is 200 uW/cm^2 . Again using Equation 10, Page 21, the distance to the 2003 uW/cm^2 contour is 1.8 meters. Since the base of the antenna is approximately 14 meters above ground, the height of the structure limits the possible excessive RFR levels to at least 12.2 meters above ground. Again using Equation 10, the predicted RFR energy levels at 2 meters above ground is calculated at 4.6 uW/cm^2 or 2.3% of the FCC OET 65 allowable RFR energy exposure for the general population/uncontrolled environment. W234AS is calculated to contribute less than 5% of the total allowable general public/uncontrolled RFR energy level at ground level.

Therefore the total levels of all RFR energy sources at all points on the ground are below that required for protection of both the employees and the general public as required by ANSI 95.1-1992 or FCC OET 65, Edition 97-01. The total RFR level from W46AX and all other emitters is calculated not to not exceed 5.1% of the FCC allowable for the general public/uncontrolled environment anywhere on the ground in the immediate area of the tower. Neither workers nor the general public will be inadvertently exposed to RFR energy levels exceeding the maximum permissible exposure (MPE) levels set forth in Section 1.1310 of the Rules.

Where radio frequency fields in excess of FCC guidelines are predicted to be encountered (very near the station's transmission antenna), signs and protective devices shall secure the area affected from the general public. With respect to direct employees of this licensee, OSHA RFR guidelines will be observed. Contractors and other outside workers potentially exposed to such areas shall be advised of the hazard by posted notices or other means. The station will reduce power or cease operation, if necessary, in order to protect workers on the tower.

With these procedures in place, we believe the proposed W46AX operation will be in compliance with the RFR energy requirements of 47 CFR 1.1307(b).

