TECHNICAL EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
STATION WRVF
TOLEDO, OHIO
CH 268B 41 KW (MAX-DA) 148 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for construction permit to modify the licensed facilities of FM station WRVF at Toledo, Ohio (BLH-19900619KC). Currently, WRVF operates on channel 268B (101.5 MHz) with a nondirectional effective radiated power (ERP) of 19.0 kilowatts and an antenna radiation center height above average terrain (HAAT) of 246 meters. By means of this application, it is proposed to change transmitter site, increase the nondirectional ERP to 41 kW and decrease the HAAT to 148 meters. No other changes are proposed including no change in city of license. Therefore, the instant application is considered a "minor" change in facilities in accordance with Section 73.3573(a)(1). Processing pursuant to Section 73.215 is also requested as detailed below.

Allocation Studies

Figure 1 is a separation study from WRVF's proposed antenna location for the channel 268B operation. As shown, the proposed antenna location complies with the minimum distance separation requirements of Section 73.207 for Class B operation on channel 268 towards all existing, authorized and proposed stations and allotments with the exception of: (1) WMJK on channel 265A at Clyde, Ohio; (2) WNCO-FM on channel 267B at Ashland, Ohio; (3) a vacant channel 268A allotment at Sarnia, Ontario; (4) WWBN on channel 268A at Tucsola, Michigan; and (5) WNSN on channel 268B at South Bend, Indiana. Each short-spacing is addressed below.

The proposed WRVF operation is short-spaced by 5.38 kilometers to WMJK on channel 265A at Clyde, Ohio. It is proposed to utilize the contour protection provisions of Section 73.215 with respect to the short-spacing with WRVF. Figure 2 is a map which depicts the protected and interfering contours for WRVF's licensed and proposed operations and for

WMJK. As indicated on Figure 2, the licensed WRVF operation is involved in contour overlap normally prohibited by Section 73.215 as WRVF's protected 54 dBu contour overlaps WMJK's interfering 94 dBu contour. It is noted that the proposed WRVF 54 dBu contour will decrease the amount of overlap with WMJK's 94 dBu contour. In the Memorandum Opinion and Order in MM Docket No. 87-121 (adopted August 28, 1991; released September 17, 1991; FCC 91-273) the FCC stated (at paragraph 54) that "we see no reason why existing short-spaced licensees seeking to relocate to another similarly short-spaced site should forfeit service already established in directions where some overlap exists. Therefore, we will permit such facility re-location provided the current overlap is not increased." Therefore, the proposed facilities are permitted in the direction of WMJK.[1]

The proposed WRVF operation is short-spaced to the licensed and proposed operations of WNCO-FM on channel 267B at Ashland, Ohio by 40.29 kilometers and 40.16 kilometers, respectively. This is a "grandfathered" short-spacing pursuant to Section 73.213(a). Figure 3 depicts the protected and interfering contours for licensed and proposed operations of WRVF and the licensed and proposed operations of WNCO-FM. As indicated on Figure 3, the contour overlap will be decreased by the proposed operation. Therefore, it is believed that the proposed operation complies with the provisions of Section 73.213(a).

The proposed WRVF operation is short-spaced by 42.62 kilometers to the vacant channel 268A allotment at Sarnia, Ontario, Canada. The International Branch of the FCC was contacted to determine the permitted facilities with respect to the Sarnia short-spacing. Canada was subsequently contacted by the International Branch and indicated that they have no objection to the facilities proposed in the instant application and that they would amend Table B of the US/Canadian Agreement accordingly.

[1] The distance between WRVF's proposed transmitter location and WKNL's transmitter location (63.62 kilometers) complies with the minimum distance separation requirement of Section 73.215(e) (63 kilometers), as modified by the Second Report and Order in MM Docket No. 98-93.

The proposed WRVF operation is short-spaced to the proposed and licensed operations of WWBN on channel 268A at Tuscola, Michigan by 8.03 kilometers and 0.67 kilometers, respectively. Station WWBN's licensed and proposed operations utilize the short-spacing rules of Section 73.215 with respect to WRVF's licensed operation. As the short-spacings with WWBN's licensed and proposed operations will be decreased (i.e. the distance between the stations will be increased) by the instant application, WRVF is permitted to operate with maximum Class B facilities with respect to the WWBN.

The proposed WRVF operation is short-spaced to WNSN on channel 268B at South Bend, Indiana. This is a "grandfathered" short-spacing pursuant to Section 73.213(a). Figure 4 is a map which demonstrates that the proposed WRVF operation complies with the provisions of Section 73.213(a) as there is no overlap of the protected and interfering contours. Therefore, the proposed facilities are permitted in the direction of WRVF.

Community Coverage

Figure 5 is a map which demonstrates that WRVF's proposed operation complies with the provisions of Section 73.315. Specifically, it has been determined that the proposed 70 dBu contour will encompass 100% of the area within the Toledo city limits.

Tower Sketch

Figure 6 is a sketch of the existing tower and proposed antenna. The tower registration number is 1014219.

Environmental Considerations

The proposed WRVF facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with the "revised" OST Bulletin No. 65 (Edition 97-01, August 1997), "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin was revised to

provide assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields adopted by the Commission in 1996.[2]

The calculated power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation contained in the Bulletin. As shown on Figure 7 (vertical plane relative field pattern), the maximum vertical relative field towards the tower base (-60° to -90° elevation) is less than 0.2. Therefore, using a "worst-case" vertical relative field value of 0.2, the total ERP of 82 kW (H+V) and an antenna center of radiation height above ground level of 149 meters, the calculated power density at 2 meters above ground level at the base of the tower is 0.0051 milliwatt per square centimeter (mW/cm^2), or 2.5% of the Commission's recommended limit applicable to general population/uncontrolled exposure areas (0.2 mW/cm^2 for FM frequencies. Therefore, based on the new responsibility threshold of 5%, the proposal will comply with the new RF emission rules.

Access to the tower will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, procedures will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such procedures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the station is at reduced power or shut down.

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[2] See *Report and Order* in ET Docket 93-62, FCC 96-326, adopted August 1, 1996, 11 FCC Rcd 15123 (1997). See also *First Memorandum Opinion and Order*, ET Docket 93-62, FCC 96-487, adopted December 23, 1996, 11 FCC Rcd 17512 (1997), and *Second Memorandum Opinion and Order and Notice of Proposed Rulemaking*, ET Docket 93-62, FCC 97-303, adopted August 25, 1997.

In addition, it appears that the authorized structure is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

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