ENGINEERING REPORT

Requesting a Minor Construction Permit for FM Station

WVAC-FM – Adrian, MI
License No. BLED–19811221AP
Channel 300D (107.9 MHz)

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Exhibit 22.1 – Compliance with Radiofrequency Radiation Guidelines

(Exhibit Numbering is in response to FCC Online Form 340, Section VII)

DISCUSSION OF REPORT

This firm was retained to prepare the required engineering report in support of a minor change to Non-Commercial FM station WVAC-FM, Adrian, MI, License No. BLED-19811221AP, which operates on Channel 300D, 107.9 MHz. Currently WVAC-FM is licensed to operate with 0.013 kW at 24 meters HAAT utilizing a non-directional antenna with horizontal only polarization. WVAC-FM is one of the original Class D educational stations. Recently an inquiry to FCC staff indicated the station could increase power with a minor change application as long as the class contour does not exceed 5.4 km. Therefore, the present application requests an effective radiated power (ERP) of 0.087 kW using circular polarization. In addition a small error was found in the coordinates of the existing antenna structure. The application seeks to correct the site coordinates, which results in a revised height above average terrain (HAAT) of 24.7 meters.

The proposed operation will not produce prohibited contour overlap with any other authorized or protected facility—either domestic or Canadian. A tabulation of the proposed allocation is found in ***Exhibit 16.1***. There is one other facility, WJUC, Swanton, OH, close enough to the transmitter site to require further study. An FMCommander™ map of the relevant protected and interference contours towards WJUC has been supplied as ***Exhibit 16.2.*** It is believed there is sufficient clearance to preclude the need for further study with respect to the other protected stations shown in the allocation study. Tabulations for each contour employed will be supplied to the FCC upon request.

The proposed service contour has been calculated in accordance with the Rules, and the data obtained has been tabulated and plotted in this report. The present and proposed service contours are shown in ***Exhibit 13.4***. The proposed contour overlaps the present contour as required for a minor change application. This exhibit shows the overall service that is provided by the 1.0 mV/m contour of the proposed facility. The tabulation of the distances to the proposed service contour shown in this discussion is based on the use of the standard eight cardinal bearings, which were also used for the computation of the HAAT. However, the plotted contours shown in ***Exhibit 13.4*** are based on the use of a full 360 terrain radials and the NGDC 30 Second Terrain Database.

The antenna will be mounted on an existing 25.9 meter tower, which is located immediately adjacent to and supported by Mahan Hall on the Adrian College campus. The structure does not require registration. The present antenna will be replaced with a circularly polarized antenna using the same number of bays. Therefore, no notification of the FAA is required. The proposed configuration passes the FCC TOWAIR program.

DISCUSSION OF REPORT (continued)

A vertical antenna plan depicting the placement of the antenna on the tower has been included in ***Exhibit 13.2***.

The remainder of the information in this report and exhibit numbering are responsive to the Rules of the Commission, and provide the data for FCC Form 340.

Because the proposed facility is mounted on a tower adjacent to a campus building, a special study showing compliance with FCC Radiofrequency Radiation Guidelines has been included as ***Exhibit 22.1***.

DISTANCES TO CONTOURS: The table below shows the distances to the 1.0 mV/m contour from the proposed facility using an ERP of 0.087 kW at an HAAT of 24.7 meters. These distances have been calculated based on the FCC F(50-50) curves.

N. Lat. = 415355.0 W. Lng. = 840337.0
HAAT and Distance to Contour - FCC Method - NGDC 30 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	261.3	9.4	0.0870	-10.60	1.000	5.44
045	239.3	31.4	0.0870	-10.60	1.000	5.55
090	220.3	50.4	0.0870	-10.60	1.000	7.02
135	224.3	46.4	0.0870	-10.60	1.000	6.73
180	233.8	36.9	0.0870	-10.60	1.000	5.98
225	244.6	26.1	0.0870	-10.60	1.000	5.44
270	267.4	3.3	0.0870	-10.60	1.000	5.44
315	277.0	-6.3	0.0870	-10.60	1.000	5.44

Ave El= 246.00 M HAAT= 24.70 M AMSL= 270.7