

# **ENGINEERING REPORT**

## **MINOR CONSTRUCTION PERMIT APPLICATION**

FOR

**WQXC-FM – CH265A**

**License No. BLH-20061006AAE**

**Allegan, MI**

**December, 2011**

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Exhibit 34.1 - RF Radiation Study

(Exhibit Numbering is in response to FCC Online Form 301, Section III-B)

# Discussion of Report

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This firm was retained to prepare the required engineering report in support of a minor construction permit application for WQXC-FM, License No. BLH-20061006AAE, Allegan, MI. WQXC-FM is currently licensed to operate with 3.0 kW ERP (H)&(V) at 328 m AMSL on CH265A. This minor construction permit application requests operation at an alternate site location with a slight increase in antenna COR height. Operating parameters of 3.0 kW ERP (H) & (V) at 331 meters AMSL are requested. The facility will continue to serve the city of Allegan, MI.

The proposed site for the Class A operation meets all domestic spacing requirements of 47 C.F.R. §73.207 toward other stations in the allocation with the exception of three (3) facilities, WITL-FM – Lansing, MI on CH264B; WBYT(FM) – Elkhart IN on CH264B; and WBFX(FM) – Grand Rapids MI on CH267B. A tabulation of the existing and required spacing toward each of the other relevant stations is found in **Exhibit 29.1**. Continued grandfathered short-spaced §73.213(c) processing toward WITL-FM, WBYT(FM) and WBFX(FM) under the former Class A, 3.0 kW spacings has been requested in **Exhibit 32.1**. Concerning §73.213(c) processing toward WBFX(FM) – Grand Rapids, MI – CH267B, the applicant would like note that the licensed spacing of 68.0 km is currently grandfathered with a (-1.0 km) excess of the minimum §73.213(c) second adjacent channel Class A to Class B spacing of 69.0 km. This proposal will move WQXC-FM (-0.2 km) closer to WBFX(FM) with a proposed spacing of 67.8 km, or a (-1.2 km) excess of the minimum §73.213(c) second adjacent channel Class A to Class B spacing of 69.0 km. FCC staff have been consulted and due to the Commission's rounding policy, the proposed (-1.2 km) excess of the minimum §73.213(c) second adjacent channel Class A to Class B spacing may be rounded down to (-1.0 km) and thus viewed as a continuation of the current WBFX(FM) grandfathered §73.213(c) status.

The proposed service contours have been calculated in accordance with the Rules, and the data obtained has been tabulated and plotted in this report. The plotted contours are found as **Exhibit 26.5** of this report. This exhibit shows the 3.16 mV/m contour which serves the community of license, and the overall service provided by the 1.0 mV/m contour of the facility. The plotted contours shown in **Exhibit 26.5**, are based on the use of a full 360 terrain radials.

The USGS 03 second terrain database has been used in the calculation of all allocation, contour and HAAT values contained here-in.

The proposed three bay antenna will be mounted on a new tower requiring Antenna Structure Registration. Therefore the FAA will be notified concurrent with this Form 301-FM filing. ASR will be filed upon receipt of FAA "Determination of No Hazard". Copies of USGS aerial photographs and 7.5 minute topographic mapping for the proposed site have been included in **Exhibit(s) 26.1 to 26.2**. A copy of the vertical antenna plan has been included as **Exhibit 26.3**.

The remainder of the information in this report and exhibit numbering is responsive to the Rules of the Commission, and provides the data for FCC Form 301, Section III-B.

## Discussion of Report (Continued)

**RADIATION PROTECTION:** The Commission requires an engineering study regarding compliance with the guidelines for human protection from radiofrequency radiation. This report section is in response to that provision of the Rules. The current Federal Communications Commission guidelines for RF radiation protection are set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01).

The FM Broadcast facility proposed in this application will not produce human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. **Exhibit 34.1** provides the details of the study that was made to demonstrate compliance. The facility is properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

***In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.***

**DISTANCES TO CONTOURS:** The table below shows the distances to the 3.16 mV/m and 1.0 mV/m contours from the proposed facility using an ERP of 3.0 kW at an HAAT of 100 meters. These distances have been calculated based on the FCC F(50-50) curves.

N. Lat. = 423026.0    W. Lng. = 854532.0							
HAAT and Distance to Contour,							
FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC							
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5	70-F5
000	228.4	102.6	3.0000	4.77	1.000	24.52	13.63
045	251.3	79.7	3.0000	4.77	1.000	21.69	12.06
090	239.5	91.5	3.0000	4.77	1.000	23.21	12.88
135	227.0	104.0	3.0000	4.77	1.000	24.68	13.72
180	229.3	101.7	3.0000	4.77	1.000	24.42	13.56
225	226.4	104.6	3.0000	4.77	1.000	24.75	13.76
270	217.6	113.4	3.0000	4.77	1.000	25.66	14.34
315	230.7	100.3	3.0000	4.77	1.000	24.26	13.47
Ave El= 231.26 M    HAAT= 99.74 M    AMSL= 331							