

ENGINEERING REPORT

**Requesting a
Minor Construction Permit
Application for FM Station**

WYFO(FM) – Lakeland, FL
License No. BLED-19900604KA
(Facility ID No. 5116)

New Directional Antenna Pattern

December, 2013

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(none)

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(none)

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(none)

RF Radiation Study Requirement (See Discussion)

(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 this minor Construction Permit Application for Non-Commercial FM station WYFO(FM) – Lakeland, FL (Facility ID No. 5116), License No. BLED-19900604KA. WYFO(FM) is presently licensed to operate on CH220C3 (91.9 MHz) with 25.0 kW(H) and 23.0 kW(V) at 139 meters AMSL. WYFO(FM) presently employs a directional antenna. A new directional antenna pattern employing 25.0 kW(H&V) from the same site location is requested. The antenna will be mounted at a modified COR of 138 meters AMSL. The facility will continue to serve the community of Lakeland, FL.

The proposed site for the Class C3 operation will continue to meet all §73.509 Reserved Band contour protections toward other stations in the allocation. An FMCommander™ allocation study as supplied by V-Soft® Communications has been included in **Exhibit 18.1**. There are four (4) existing or proposed facilities close enough to merit further study. Therefore, contour protection maps and tabulations have been supplied for these four (4) facilities as noted in **Exhibit(s) 18.2 to 18.5**. It is believed there is sufficient clearance to preclude the need for further study with respect to the other §73.509 protected stations shown in the allocation study.

The proposed site for the Class C3 operation will continue to meet all §73.207 Non-Reserved Band spacing protections toward other stations in the allocation. The §73.207 spacing protections have also been included in **Exhibit 18.1**.

The transmitter site is located more than 320 km of the common border between the United States and Canada and/or Mexico. As a result, no further international showings are believed required.

The transmitter site proposed in this application is not located within the affected radius of any TV-6 facility as noted in the FCC CDBS database at the time of this filing, therefore no further TV-6 showings are believed required.

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 16.4** of this report. This exhibit shows the overall service that is provided by the 1.0 mV/m contour of the facility. The tabulation of the distances to the respective contours 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 16.4** are based on the use of a full 360 terrain radials. The applicant would like to note use of the USGS 03 Second Terrain Database for all Allocation, Contour and HAAT showings contained here-in.

The proposed antenna will be mounted on the existing tower bearing Antenna Structure Registration (ASR) #1048679. A copy of ASR #1048679 has been included in **Exhibit 16.1**. As this proposal will not increase the overall tower height, the FAA need not be notified. A vertical antenna plan depicting the placement of the antenna on the tower has been included in **Exhibit 16.2**.

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 340.

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 is within the uncontrolled limits as noted in the supplied ***Exhibit 24.1*** study. The RF radiation will not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. The facility will be properly marked with signs, and entry will be 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 1.0 mV/m contour from the proposed facility using an ERP of 25.0 kW at an HAAT of 97 meters. These distances have been calculated based on the FCC F(50-50) curves.

N. Lat. = 275635.0 W. Lng. = 815445.0						
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
000	38.0	100.0	13.5056	11.31	0.735	34.22
045	34.8	103.2	25.0000	13.98	1.000	39.61
090	34.9	103.1	25.0000	13.98	1.000	39.58
135	36.4	101.6	25.0000	13.98	1.000	39.34
180	55.9	82.1	25.0000	13.98	1.000	35.82
225	42.4	95.6	25.0000	13.98	1.000	38.33
270	36.2	101.8	25.0000	13.98	1.000	39.37
315	46.6	91.4	7.9102	8.98	0.562	28.86
Ave El= 40.65 M HAAT= 97.35 M AMSL= 138						