

ENGINEERING REPORT

FM Translator Minor Construction Permit Modification Application

for

W276CM.C - Mansfield, OH
Permit No. BNPFT-20130325ANY
(Facility ID Number: 142508)

Change(s) in Frequency (I.F. Channel),
Site, Directional Antenna,
& Increase in Power.

September, 2015

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(Exhibit numbering is in response to FCC Online Form 349, Section III-A)

Discussion

This firm has been retained to prepare the required engineering report in support of a Minor Construction Permit Modification Application for FM Translator W276CM.C - Mansfield, OH, Permit No. BNPFT-20130325ANY (Facility ID: 142508). W276CM.C is presently authorized to operate on Channel 276D, 103.1 MHz, with 0.010 kW of non-directional power at an antenna COR of 519 meters AMSL. Operation with a new directional antenna is requested from a new site location. Operation on minor I.F Channel CH222D, 92.3 MHz, with 0.250 kW ERP (V) at 414 meters AMSL is proposed utilizing a new one bay directional Scala CA2-FM(V) yagi antenna. The Translator will rebroadcast new Primary Station WQEL(FM) - Bucyrus, OH, CH224A (Facility ID No. 7112) as an FM Fill-In Translator. The Translator will continue to serve the licensed community of Mansfield, OH.

The Translator will be mounted on the existing tower bearing Antenna Structure Registration Number 1015345. A copy of ASR #1015345 has been included in **Exhibit 13.1**. The vertical antenna system has been plotted in **Exhibit 13.2**. As this proposal will not increase the overall height of the tower, notification to the FAA is not believed required.

It has been determined the Translator may be used in the area without interference to any existing FM broadcast station or facility with the exception of WQEL(FM) - Bucyrus, OH (CH224A). General allocation details are found in **Exhibit 13.5**. Concerning WQEL(FM), processing under §74.1204(e) is requested as this proposed Translator will rebroadcast WQEL(FM) as a second adjacent channel Fill-In Translator. The proposed second adjacent 100 dBu F(50:10) interference contour will not cause interference to the WQEL(FM) principal community of Bucyrus, OH as noted in **Exhibit 13.4**. There are two (2) facilities, existing or proposed, close enough to merit further study. Therefore supplemental contour protection studies have been provided toward WCOL-FM.L - Columbus, OH and WOHF(FM).L - Bellevue, OH as included in **Exhibit(s) 13.6 to 13.7**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The applicant would like to note use of the NED 03 second terrain database for all allocation, contour and HAAT showings contained here-in.

The proposed 60 dB μ contour of the Fill-In Translator lies wholly inside of the WQEL(FM) primary 60 dB μ service contour. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 13.4**.

Regarding protection of international concerns, the facility is and will remain within 320 km of the common border between the United States and Canada. The applicant certifies the proposed Translator 34 dB μ F(50:10) interference contour does not enter Canadian territory. Documentation of the proposed 34 dB μ F(50:10) interference contour will be supplied upon request.

The proposed operating parameters have been changed from the licensed values, however the proposed service contour serves a portion of the present service area as seen in **Exhibit 13.3**.

Discussion (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 §1.1307(b)(3) of the Commission's rules concerning RF contributors of less than 5%. **Exhibit 17.1** 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 following tabulation of the distances to the proposed service contours results from calculations performed in accordance with §73.313(d) and §73.333 Figure 1.

N. Lat. = 404526.0 W. Lng. = 824723.0 HAAT and Distance to Contour, FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	334.5	79.5	0.2500	-6.02	1.000	11.54
030	342.8	71.2	0.2500	-6.02	1.000	10.98
060	354.1	59.9	0.1056	-9.76	0.650	8.10
090	394.7	19.3	0.2500	-6.02	1.000	7.09
120	383.2	30.8	0.2025	-6.94	0.900	6.81
150	394.4	19.6	0.2500	-6.02	1.000	7.09
180	364.2	49.8	0.0225	-16.48	0.300	5.04
210	332.7	81.3	0.0100	-20.00	0.200	5.25
240	320.5	93.5	0.0625	-12.04	0.500	8.88
270	318.6	95.4	0.2500	-6.02	1.000	12.57
300	318.4	95.6	0.2500	-6.02	1.000	12.59
330	320.4	93.6	0.2500	-6.02	1.000	12.46
Ave El= 348.20 M HAAT= 65.80 M AMSL= 414						