

# **ENGINEERING REPORT**

## **FM Translator Minor Construction Permit Application**

for

**W277AM.L – Biddeford, ME**

License No. BLFT-20070103AEP

Facility ID Number 149580

June, 2014

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

## Discussion

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This firm has been retained to prepare the required engineering report in support of a minor construction permit application for FM Translator W277AM – Biddeford, ME, License No. BLFT-20070103AEP. W277AM presently operates on Channel 277D, 103.3 MHz, with 13 watts of non-directional power with an antenna COR of 127 meters AMSL. W277AM also holds authorized construction permit BMPFT-20140514ADM, however this Permit will be voluntarily surrendered concurrent with this Form 349 filing. This current Form 349 proposal requests a simple increase in W277AM power from the current licensed site. Continued operation on CH277D, 103.3 MHz is requested with an increased power of 160 watts ERP (H&V). The antenna COR will remain unchanged at 127 meters AMSL utilizing the same BEXT TFC1K, one (1) bay, non-directional antenna. The translator will rebroadcast the HD3 sub-channel of new primary station WMGX(FM) – Portland, ME, CH226B (Facility ID No. 58548) as a Fill-In Translator. The Translator will continue to serve the community of Biddeford, ME.

The translator will remain mounted on the existing tower bearing Antenna Structure Registration Number 1219697. A copy of ASR #1219697 has been included in **Exhibit 13.1**. As this Form 349 filing will not increase the overall tower height, notification to the FAA is not believed necessary.

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 WBLM(FM) – Portland, ME (CH275C0). General allocation details are found in **Exhibit 13.5**. A §74.1204(d) Second Adjacent Channel Given Interference Waiver is requested toward WBLM(FM) as included in **Exhibit 13.7**. Full protection will be afforded WBLM(FM) as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has been included in **Exhibit 13.8**. There is one (1) facility, existing or proposed, close enough to merit further study. Therefore supplemental contour protection studies have been provided toward co-channel station WMCM(FM) – Rockland, ME (CH277B) as included in **Exhibit 13.6**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The applicant would like to note use of the NGDC 30 second terrain database for all allocation, contour and HAAT showings contained here-in.

The proposed 54 dBμ Contour of the Fill-In Translator lies wholly inside of the WMGX(FM) 54 dBμ Primary 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. As noted in **Exhibit 13.5**, all Canadian concerns have been fully protected. In addition, the application certifies that the proposed 34 dBμ F(50:10) contour will not enter Canadian soil. A copy of the 34 dBμ F(50:10) 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 or will be properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates if required. 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. = 433238.0    W. Lng. = 702416.0						
HAAT and Distance to Contour,						
FCC, FM 2-10 Mi, 51 pts Method - NGDC 30 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	29.8	97.2	0.1600	-7.96	1.000	11.40
030	21.4	105.6	0.1600	-7.96	1.000	11.85
060	13.8	113.2	0.1600	-7.96	1.000	12.25
090	1.1	125.9	0.1600	-7.96	1.000	12.87
120	0.3	126.7	0.1600	-7.96	1.000	12.91
150	0.4	126.6	0.1600	-7.96	1.000	12.91
180	2.0	125.0	0.1600	-7.96	1.000	12.83
210	25.3	101.7	0.1600	-7.96	1.000	11.64
240	32.3	94.7	0.1600	-7.96	1.000	11.26
270	43.6	83.4	0.1600	-7.96	1.000	10.60
300	47.6	79.4	0.1600	-7.96	1.000	10.36
330	41.8	85.2	0.1600	-7.96	1.000	10.71
Ave El= 21.62 M    HAAT= 105.38 M    AMSL= 127						