

# **ENGINEERING REPORT**

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

for

**W232BW – Amherst, MA  
Lic. No. BLFT-20091013AGU  
Facility ID: 84372**

November, 2009

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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 W232BW, License No. BLFT-20091013AGU. The translator presently operates with 250 watts of directional power with a max antenna COR of 404 meters AMSL. This minor construction permit modification proposes a rotation of the presently licensed DA pattern from 273°T to 300°T and a reduction in power from 250 watts to 59 watts to resolve informal interference complaints noted from WYBC-FM, New Haven, CT. The translator will continue to rebroadcast WLZX(FM) Northampton, MA and service the community of Amherst, MA.

The site is an existing communications tower bearing Antenna Structure Registration Number 1028013. As this proposal will not increase the overall tower height, therefore the FAA need not be notified. A copy of existing ASR has been included in **Exhibit 13.1**. A copy of the vertical antenna system has been included in **Exhibit 13.2**.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station or translator operation with the exception of WMAS-FM, Springfield, MA and WRSI(FM), Turners Falls, MA. Allocation details are found in **Exhibit 13.5**. A §74.1204(d) waiver request for second adjacent channel given interference towards WMAS-FM and WRSI(FM) showing a lack of population or housing within the interference area has been 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 the use of the NGDC 30 second terrain database for all HAAT, allocation and contour showings.

The translator will employ two Scala CL-FM directional antenna elements. One bay will be mounted in the horizontal plane and one bay will be mounted in the vertical plane. As stated before, the antenna will be mounted on an existing tower.

The Fill-In Translator site lies inside of the primary service contour of WLZX(FM), and the 1 mV/m (60 dBu) contour of the proposed Fill-In Translator lies wholly inside of the WLZX(FM) primary 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 proposed facility will remain within 320 km of the common border of the United States and Canada. Full protection will be afforded all Canadian concerns as noted in the **Exhibit 13.5** allocation study. In addition, the proposed 34 dBu f(50:10) interference contour does not reach the Canadian border. Documentation of the 34 dBu 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**.

The proposed facility meets the requirements of the Rules for operation without a licensed operator in attendance. The transmitter site may be reached promptly at all hours and in all seasons. The transmitter will be equipped with proper control and interface circuits which will place the translator in a non-radiating condition in the event the proper incoming signal is absent. The transmitter and controls will be placed in a locked area to prevent unauthorized tampering with the equipment. A person or persons will be assigned to observe the signals of the station each day, and to take corrective action if required. The equipment proposed for operation is listed in the type-approved list of the Commission.

## 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 §1.1310 of the Commission's rules. ***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. = 422149.0    W. Lng. = 722524.0						
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	332.5	71.5	0.0090	-20.47	0.390	4.78
030	252.9	151.1	0.0001	-42.75	0.030	1.61
060	210.6	193.4	0.0001	-42.75	0.030	1.61
090	211.2	192.8	0.0001	-42.75	0.030	1.61
120	201.4	202.6	0.0001	-42.75	0.030	1.61
150	202.9	201.1	0.0001	-42.75	0.030	1.61
180	151.1	252.9	0.0001	-42.75	0.030	1.61
210	100.2	303.8	0.0001	-42.75	0.030	1.61
240	104.2	299.8	0.0090	-20.47	0.390	9.84
270	64.0	340.0	0.0394	-14.05	0.817	15.08
300	75.8	328.2	0.0590	-12.29	1.000	16.45
330	180.3	223.7	0.0394	-14.05	0.817	12.25
Ave El= 173.92 M    HAAT= 230.08 M    AMSL= 404.0						