

# **ENGINEERING REPORT**

## **FM Translator Minor Change Modification**

for

**W278BG – Peterborough, NH  
Frequency Change to CH281D  
Power Decrease to 59 watts  
City of License Change to Keene, NH**

Lic No. BLFT-20080401ASS

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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 change modification for FM "Fill In" translator W278BG, Peterborough, NH, pending License No. BLFT-20080401ASS. W278BG is presently licensed to operate on 103.5 MHz with 0.135 watts of non-directional power with an antenna COR of 381 meters AMSL. Proposed operation on CH281D with 59 watts ERP circular polarization at a COR of 193 meters AMSL from an alternate site location is requested. A minor city of license change to Keene, NH is also requested. Due to CDBS limitations, the translator will be listed as rebroadcasting parent station WKNE(FM), Keene, NH, however an STA has been requested for rebroadcast of WKBK(AM), Keene, NH, 1290 kHz. This proposal will not adversely affect the WKBK(AM) STA request.

The proposed site will be the existing WZBK(AM) tower identified by Antenna Structure Registration Number 1244740. This proposal will not increase the overall tower height, therefore the FAA need not be notified. A copy of the existing ASR has been included in **Exhibit 12.1**. A copy of the vertical antenna system has been included in **Exhibit 12.2**.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station or translator with the exception of WKNE(FM) – Keene, NH. Allocation details are found in **Exhibit 12.5**. Protection towards WKNE(FM) has been demonstrated in **Exhibit 12.6** through a downward radiation study. The calculated interference area will not reach the ground nor an artificial plane 9 meters above ground level representing a standard second story building. Information concerning the proposed translator antenna has been included at the end of this exhibit. The applicant would like to note the qualifications of §74.1204(e) have been met as the calculated interference has been shown to not reach the ground. In addition, the qualifications of §74.1204(e) have been further met as the facility will actually rebroadcast WKBK(AM) 1290 kHz under a recently filed STA. WKNE(FM) has been listed as the primary station due to CDBS limitations regarding AM rebroadcast. Additional contour protection studies have been supplied toward WXLO(FM) – Fitchburg, MA. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

This proposed CH281D facility modification for W278BG, pending License No. BLFT-20080401ASS will share the same antenna with one other non-contingent, but concurrently filed FM facility for CH276D, W275BI, pending License No BLFT-20080401ASV.

The translator site lies inside of the of the Class B primary service contour of WKNE(FM), and the 1 mV/m (60 dBu) contour of the proposed fill-in translator does not extend beyond the WKNE(FM) primary contour, thus qualifying for fill-in translator status. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 12.4**. The applicant would like to note the use of the USGS 03 Second Terrain database for all calculations. The applicant would also like to note the translator site and proposed 60 dBu contour lie inside of the of the WKBK(AM) 2.0 mV/m daytime contour and a 25 mile radius around the WKBK(AM) as shown in **Exhibit 12.4**, thus also continuing to qualify for fill-in translator status.

Regarding protection of Canadian concerns, the present facility is and will remain within 320 km of the common border between the United States and Canada. No Canadian allotment nor Canadian facility has been noted in the proposed allocation. In addition, the proposed 34 dBu f(50:10) contour falls well short of the §74.1235(d)(3) 60 km limit. A tabulation of the 34 dBu f(50:10) contour will be supplied upon request.

## Discussion (continued)

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 12.3**. 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.

**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 16.1** 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. = 425550.0    W. Lng. = 721800.0						
HAAT and Distance to Contour - FCC Method - USGS 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	267.1	-74.1	0.0590	-12.29	1.000	4.92
030	355.5	-162.5	0.0590	-12.29	1.000	4.92
060	349.2	-156.2	0.0590	-12.29	1.000	4.92
090	337.7	-144.7	0.0590	-12.29	1.000	4.92
120	311.9	-118.9	0.0590	-12.29	1.000	4.92
150	273.1	-80.1	0.0590	-12.29	1.000	4.92
180	212.5	-19.5	0.0590	-12.29	1.000	4.92
210	215.0	-22.0	0.0590	-12.29	1.000	4.92
240	306.5	-113.5	0.0590	-12.29	1.000	4.92
270	251.8	-58.8	0.0590	-12.29	1.000	4.92
300	219.0	-26.0	0.0590	-12.29	1.000	4.92
330	313.2	-120.2	0.0590	-12.29	1.000	4.92
Ave El= 284.37 M    HAAT= -91.37 M    AMSL= 193						