

# **ENGINEERING REPORT**

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

for

**W249BF – Fredericksburg, VA**

Lic No. BLFT-19990608UA

March, 2009

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**MUNN-REESE, INC.**  
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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 W249BF, Fredericksburg, VA, License No. BLFT-19990608UA. W249BF presently operates on 97.7 MHz with 19 watts of non-directional power with an antenna COR of 134 meters AMSL. A simple frequency change is requested from the existing site and antenna height. Operation on CH252D with 19 watts ERP at a COR of 134 meters AMSL is requested. The translator will continue to rebroadcast FM station WYFJ(FM), Ashland, VA.

The existing tower presently holds Antenna Structure Registration Number 1055490. A copy of existing ASR 1055490 has been included in **Exhibit 12.1**. A copy of the vertical antenna system has been included in **Exhibit 12.2**. As this proposal will not increase the overall tower height, it is believed the FAA need not be notified.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station or facility. General allocation details are found in **Exhibit 12.5**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The translator site and proposed 60 dBu contour lie completely outside of the WYFJ(FM) 60 dBu contour. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 12.4**.

Regarding protection of international concerns, the facility is and will remain more than 320 km of the common border between the United States and Canada or Mexico. As a result, no further international showings are required.

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**.

**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 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.

## Discussion (continued)

*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 utilizing the NGDC 30 second terrain database.

N. Lat. = 382116.0 W. Lng. = 773047.0						
HAAT and Distance to Contour						
V-Soft 3-16 km, 131 pts Method - NGDC 30 SEC						
W249BF, Bible Broadcasting Network, I, BLFT19990608UA						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	83.5	50.5	0.0190	-17.21	1.000	4.87
030	66.6	67.4	0.0190	-17.21	1.000	5.60
060	42.5	91.5	0.0190	-17.21	1.000	6.52
090	28.3	105.7	0.0190	-17.21	1.000	7.02
120	46.4	87.6	0.0190	-17.21	1.000	6.38
<b>150</b>	<b>23.1</b>	<b>110.9</b>	<b>0.0190</b>	<b>-17.21</b>	<b>1.000</b>	<b>7.19</b>
180	65.5	68.5	0.0190	-17.21	1.000	5.64
210	78.9	55.1	0.0190	-17.21	1.000	5.10
240	78.4	55.6	0.0190	-17.21	1.000	5.12
270	71.8	62.2	0.0190	-17.21	1.000	5.40
300	79.7	54.3	0.0190	-17.21	1.000	5.06
330	98.1	35.9	0.0190	-17.21	1.000	4.02
Ave El= 63.58 M HAAT= 70.42 M AMSL= 134 M						