

ENGINEERING REPORT

FM Translator Minor Construction Permit Application

for

W224AE – Wytheville, VA

License No. BLFT-19831011MA

August, 2012

COPYRIGHT 2012

MUNN-REESE, INC.
Broadcast Engineering Consultants
Coldwater, MI 49036

TABLE OF CONTENTS

Discussion of Report

FM Booster/Fill-in Translator Requirements (See Discussion)

Interference Requirements

Exhibit 13.1 - Copy of USGS Topographic Map of Existing Site

Exhibit 13.2 - Copy of USGS Aerial Photograph of Existing Site

Exhibit 13.3 - Vertical Plan of Antenna System and Support Tower

Exhibit 13.4 - Present vs Proposed Service Contour Study

Exhibit 13.5 - Proposed vs Primary Station Service Contour Study

Contour Overlap Requirements

Exhibit 13.6 - Tabulation of Proposed Allocation

TV Channel 6 Protection Requirements (See Discussion)

Unattended Operation Requirements (See Discussion)

Multiple Translator Requirements (See Discussion)

RF Radiation Study Requirement

Exhibit 17.1 - RF Compliance Study

(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 application for FM translator W2224AE – Wytheville, VA, License No. BLFT-19831011MA. W224AE presently operates on Channel 224D, 92.7 MHz, with 24 watts of directional power with an antenna COR of 1125 meters AMSL. While the existing site will be reused, errors in both coordinates and ground elevation are requested from a higher height on the tower. Operation on Channel 2224D, 92.7 MHz with 10 watts of non-directional power at 1136 meters AMSL is requested. The translator will utilize a new SWR FMEC-1 non-directional antenna. The translator will continue to rebroadcast primary station WHPE-FM – High Point, NC, CH238C1, Facility ID No. 5164. The Translator will continue to serve the community of Wytheville, VA.

The translator will be mounted on an existing tower which does not require Antenna Structure Registration. A copy of USGS Topographic Mapping and USGS Aerial Photography has been included in **Exhibit(s) 13.1 to 13.2**. A copy of the vertical antenna system has been included in **Exhibit 13.3**. As this proposal will not increase the overall tower height, 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 with the exception of WXLK(FM) – Roanoke, VA (CH222C). General allocation details are found in **Exhibit 13.6**. A §74.1204(d) Second Adjacent Channel Given Interference Waiver is requested toward WXLK(FM) as noted in **Exhibit(s) 13.1 to 13.2**. Full protection will be afforded WXLK(FM) as the proposed worst case calculated 102.0 dBu F(50:10) interference contour corresponding to the WXLK(FM) - CH222C - Roanoke, VA 62.0 dBu F(50:50) protected contour is void of all population, housing or major roads with the exception of structures associated with the restricted access mountain top *de facto* Antenna Farm. USGS Topographic and Aerial Photo documentation demonstrating a lack of population has been included in **Exhibit(s) 13.1 and 13.2**. 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 translator site and proposed 60 dBu contour lie outside of the WHPE-FM 60 dBu NCE-FM service contour. As a result, the translator will continue to operate as a Non-Fill-In (regular) Translator. A map of the proposed translator service area in relation to the primary NCE-FM service contour has been included in **Exhibit 13.5**.

Regarding protection of international concerns, the facility is and will remain more than 320 km from the common border between the United States and Canada or Mexico. As a result, no additional international showings are believed 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 13.4**.

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. = 365427 W. Lng. = 810406 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	744.8	391.2	0.0100	-20.00	1.000	11.45
030	714.1	421.9	0.0100	-20.00	1.000	11.83
060	684.3	451.7	0.0100	-20.00	1.000	12.17
090	758.4	377.6	0.0100	-20.00	1.000	11.29
120	683.6	452.4	0.0100	-20.00	1.000	12.17
150	735.6	400.4	0.0100	-20.00	1.000	11.56
180	806.9	329.1	0.0100	-20.00	1.000	10.58
210	812.4	323.6	0.0100	-20.00	1.000	10.49
240	840.6	295.4	0.0100	-20.00	1.000	10.05
270	729.7	406.3	0.0100	-20.00	1.000	11.64
300	726.2	409.8	0.0100	-20.00	1.000	11.68
330	789.6	346.4	0.0100	-20.00	1.000	10.85
Ave El= 752.18 M HAAT= 383.82 M AMSL= 1136 M						