

ENGINEERING REPORT

FM Translator Minor Construction Permit Application

for

W251AV – Tuscola, IL

Pending Lic. No. BLFT-20090126AEV

January, 2009

COPYRIGHT 2009

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 12.1 - Copy of Existing Antenna Structure Registration

Exhibit 12.2 - Vertical Plan of Antenna System and Support Tower

Exhibit 12.3 - Present vs Proposed Service Contour Study

Exhibit 12.4 - Proposed vs Primary Station Service Contour Study

Contour Overlap Requirements

Exhibit 12.5 - Tabulation of Proposed Allocation

Exhibit 12.6 - §74.1204(d) Waiver Request Toward WHMS-FM and WINH(FM)

TV Channel 6 Protection Requirements (See Discussion)

Unattended Operation Requirements (See Discussion)

Multiple Translator Requirements (See Discussion)

RF Radiation Study Requirement

Exhibit 16.1 - 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 W251AV, Tuscola, IL, Pending License No. BLFT-20090126AEV. W251AV presently operates on 98.1 MHz with 240 watts of directional power with an antenna COR of 207.6 meters AMSL. A new site location, lower power and higher AMSL height are requested. Operation on CH250D with 5 watts ERP at 313 meters AMSL is requested. Non-directional operation will be employed. The translator will rebroadcast FM station WLRW(FM), Champaign, IL, CH233B and remain licensed to Tuscola, IL.

The existing tower bears Antenna Structure Registration number 1011415. 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 facility with the exception of WHMS-FM, Champaign, IL, CH248B, and WINH(FM), Paris, IL, CH253B. General allocation details are found in **Exhibit 12.5**. A §74.1204(d) Second and Third Adjacent Channel Given Interference Waiver is requested toward WHMS-FM and WINH(FM). Protection toward both facilities has been demonstrated 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 two story building. The §74.1204(d) downward radiation study waiver request has been included in **Exhibit 12.6**. The downward radiation characteristics as supplied by the antenna manufacturer have been provided as well. 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 proposed 60 dBu contour of the fill-in translator lies wholly within WLRW(FM) primary service 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 from 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 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.

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.

N. Lat. = 400045.0 W. Lng. = 880829.0 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	208.1	104.9	0.0050	-23.01	1.000	5.02
030	203.3	109.7	0.0050	-23.01	1.000	5.14
060	201.1	111.9	0.0050	-23.01	1.000	5.19
090	203.0	110.0	0.0050	-23.01	1.000	5.15
120	208.5	104.5	0.0050	-23.01	1.000	5.01
150	208.4	104.6	0.0050	-23.01	1.000	5.01
180	199.4	113.6	0.0050	-23.01	1.000	5.23
210	201.3	111.7	0.0050	-23.01	1.000	5.19
240	210.2	102.8	0.0050	-23.01	1.000	4.97
270	211.7	101.3	0.0050	-23.01	1.000	4.93
300	218.2	94.8	0.0050	-23.01	1.000	4.76
330	219.8	93.2	0.0050	-23.01	1.000	4.72
Ave El= 207.74 M HAAT= 105.26 M AMSL= 313						