

# **ENGINEERING REPORT**

## **FM Translator Minor Change Application**

**For**

**W284AH – Lansing, MI**  
File No. BLFT-20150716ABY  
Facility ID No. 77818

November, 2015

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# **Table of Contents**

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Discussion of Report

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

**Interference Requirements**

- Exhibit 13.1 - Copy of Antenna Structure Registration
- Exhibit 13.2 - Vertical Plan of Existing Support Structure
- Exhibit 13.3 - Present vs Proposed Service Contour Study
- Exhibit 13.4 - Proposed vs Primary Station Service Contour Study

**Contour Overlap Requirements**

- Exhibit 13.5 - 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**

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This firm has been retained to prepare the required engineering report in support of an Minor Change Application for FM Translator W284AH – Lansing, MI, (BLFT-20150716ABY), Facility ID #77818. W284AH is licensed for operation on Channel 284D, 104.7 MHz, with an ERP of 0.25 kW at a center of radiation (COR) of 285.2 meters AMSL. It is proposed to operate on ASR #1055176 with the center of radiation (COR) of 349.2 meters AMSL. A non-directional BEXT, Model TFC1K, two-bay antenna will be employed. The translator will rebroadcast primary station KTGG, Okemos, MI, on 1540 kHz, (Facility ID No. 61993) as a fill-in Translator. KTGG has an outstanding construction permit, BP20080124ACW, for operation at the same site as the proposal herein. The translator will continue to serve the community of Lansing, MI.

The facility will be located on an existing structure. A copy of the Antenna Structure Registration (ASR) #1055176, the transmitter site location has been included as **Exhibit 13.1**. The vertical antenna system has been plotted in **Exhibit 13.2**. As no changes are proposed for the supporting structure, FAA notification is not required.

**Exhibit 13.3** is a map showing the presently licensed 60 dBu contour versus the proposed 60 dBu contour. This exhibit shows that the two contours overlap, thus qualifying as a Minor Change Application.

**Exhibit 13.4** is a map showing the relationship between the proposed facility's 60 dBu contour versus the primary station, KTGG(AM)'s 2 mV/m contour and a 25 mile radius from the KTGG(CP) transmitter site. The proposed 60 dBu contour will fall entirely within both of these parameters from the KTGG(CP) site.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station. General allocation details are found in **Exhibit 13.5**. Full protection is afforded all facilities as shown in this exhibit.

The applicant would like to note the use of the USGS 03 SEC Terrain Database for all allocation, contour and HAAT calculations contained here-in.

**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.

# Discussion

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**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 utilizing the USGS 03 second terrain database.

N. Lat. = 424313.0    W. Lng. = 843109.0						
HAAT and Distance to Contour,						
FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC						
W284AH - Lansing, MI Proposed Operation						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	259.4	89.8	0.2500	-6.02	1.000	12.21
030	257.5	91.7	0.2500	-6.02	1.000	12.34
060	263.9	85.3	0.2500	-6.02	1.000	11.92
090	264.0	85.2	0.2500	-6.02	1.000	11.92
120	273.9	75.3	0.2500	-6.02	1.000	11.25
150	270.0	79.2	0.2500	-6.02	1.000	11.52
180	270.8	78.4	0.2500	-6.02	1.000	11.47
210	267.3	81.9	0.2500	-6.02	1.000	11.70
240	265.8	83.4	0.2500	-6.02	1.000	11.80
270	262.0	87.2	0.2500	-6.02	1.000	12.04
300	257.8	91.4	0.2500	-6.02	1.000	12.32
330	257.0	92.2	0.2500	-6.02	1.000	12.37
Ave El= 264.11 M    HAAT= 85.09 M    AMSL= 349.2 M						