

# **ENGINEERING REPORT**

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

for

**K287BI.C - Dumas, AR  
(Facility ID: 151624)**

**"250 Mile Window Application"  
Pursuant to FCC Public Notice  
DA 1491 (issued 12/23/2015)**

for

**CH235D.P - Shreveport, LA  
as an AM Fill-In Translator for  
KIOU(AM) - Shreveport, LA**

April 2016

COPYRIGHT 2016

# **Table of Contents**

---

Discussion of Report

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

**Interference Requirements**

Exhibit 13.1a - Copy of USGS Topographic Mapping of Existing Site

Exhibit 13.1b - Copy of USGS Aerial Photography of Existing Site

Exhibit 13.2 - Vertical Plan of Antenna System and Support Tower

Exhibit 13.3 - Proposed Service Contour Map

Exhibit 13.4 - Proposed vs Primary Contour & §74.1233(a)(1) Showing

**Contour Overlap Requirements**

Exhibit 13.5 - Tabulation of Proposed Allocation

Exhibit 13.6 - §74.1204(d) 2nd and/or 3rd Adjacent Channel Given Interference Waiver Request

Exhibit 13.7 - Copy of Manufacturer's Vertical Radiation Pattern Data

**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 Modification Application for FM Translator K287BI.C - Dumas, AR (Facility ID: 151624). *This Form 349 Filing is being filed as a "250 Mile Window Application" in response to the Revitalization of the AM Radio Service, First Report and Order MB Docket No. 13-249 (FCC 15-142), released October 23, 2015; subsequent Public Notice DA 15-1215, released October 26, 2015; and final Public Notice DA 1491, released December 23, 2015. This Form 349 Application is being filed under the "First Modification Window" open for AM Class C and D Fill-In Translators.* This Translator proposal requests a new (less than 250 mile) site relocation and new (non-adjacent channel) operational frequency. Operation on CH235D (94.9 MHz) with 0.250 kW ERP (H&V) at 97 meters AMSL is proposed. The Fill-In Translator will rebroadcast Class D AM Primary Station KIOU(AM) - Shreveport, LA (1480 kHz); Facility ID No. 33714. The Translator will serve the new community of Shreveport, LA.

The Translator will be mounted on the existing tower for which Antenna Structure Registration is pending. A USGS Topographic Map and Aerial Photograph of the existing tower site has been included in **Exhibit(s) 13.1(a-b)**. The vertical antenna system has been included in **Exhibit 13.2**. FAA notification is pending.

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 KRUF(FM). General allocation details are found in **Exhibit 13.5**. The applicant would like note the existence of a §74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Request toward KRUF(FM) - Shreveport, LA (CH233C0) as noted in **Exhibit 13.6**. Protection has been based on the worst case calculated 128.6 dBμ F(50:10) Interference Contour, corresponding to the worst case 88.6 dBμ F(50:50) Protected Contour. Protection has been demonstrated through the attached downward radiation study. Full protection will be afforded the facility as the interference area will not reach the ground nor a seven meter artificial plane representing a standard two story home when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has also been included in **Exhibit 13.7**. 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 proposed 60 dBμ contour of the Fill-In Translator lies wholly inside of the AM primary daytime 2.0 mV/m contour and a 25 mile radius around the AM site. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 13.4**. In addition, this exhibit also demonstrates the physical relocation of the Translator is less than 250 miles (402.3 km) in accordance with the Commission's Policy concerning this "250 Mile Window Application".

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 believed required.

## Discussion (continued)

The proposed operating parameters have been changed from the present values. A map of the proposed service contour has been included in **Exhibit 13.3**.

**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 §1.1310 of the Commission's rules. **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.

N. Lat. = 323427.0    W. Lng. = 934434.0						
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	56.9	40.1	0.2500	-6.02	1.000	8.17
030	55.4	41.6	0.2500	-6.02	1.000	8.35
060	51.5	45.5	0.2500	-6.02	1.000	8.79
090	55.6	41.4	0.2500	-6.02	1.000	8.33
120	49.7	47.3	0.2500	-6.02	1.000	8.98
150	50.6	46.4	0.2500	-6.02	1.000	8.88
180	58.3	38.7	0.2500	-6.02	1.000	8.01
210	61.1	35.9	0.2500	-6.02	1.000	7.71
240	55.4	41.6	0.2500	-6.02	1.000	8.35
270	66.4	30.6	0.2500	-6.02	1.000	7.15
300	54.6	42.4	0.2500	-6.02	1.000	8.44
330	52.4	44.6	0.2500	-6.02	1.000	8.69
Ave El= 55.66 M    HAAT= 41.34 M    AMSL= 97						