

# **ENGINEERING REPORT**

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

for

**K273BE – Richmond, MO**

Lic No. BLFT-20070920ADB

April, 2010

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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 K273BE, Richmond, MO, License No. BLFT-20070920ADB. K273BE presently operates on 102.5 MHz with 0.093 kW of circularly polarized non-directional power with an antenna COR of 326 meters AMSL. A minor frequency and site change is requested from a slightly higher COR AMSL height and power. Operation on CH274D with 200 watts ERP at a COR of 334 meters AMSL is requested. The facility will operate with a non-directional antenna employing vertical only polarization. The translator will rebroadcast new AM station KCXL(AM), Liberty, MO, 1140 kHz, Facility ID No. 1162.

The proposed facility will be mounted on an existing tower which bears Antenna Structure Registration Number 1007013. A copy of the existing ASR has been included in **Exhibit 13.1**. A copy of the vertical antenna system has been included in **Exhibit 13.2**. 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 with the exception of KCKC(FM); CH271C0; Kansas City, MO and KPRS(FM); CH277C; Kansas City, MO. General allocation details are found in **Exhibit 13.5**. §74.1204(d) third adjacent channel given interference waivers are requested toward KCKC(FM) and KPRS(FM) as included in the **Exhibit 13.6** USGS topographic map showing and waiver request. Full protection will be afforded the authorized facilities as the proposed interference area is void of population, housing, buildings or major roads as noted in the attached exhibit. There is one facility close enough to merit further protection. An FMCommander™ map and tabulation of contours toward APP273D – Kansas City, MO (BNPFT-20030317FXX) has been included in **Exhibit 13.6**. Full contour protection is afforded the pending translator application. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The translator site and proposed 60 dBu contour lie inside of the KCXL(AM) Licensed and Construction Permit 2 mV/m daytime contours and within a 25 mile radius from the common AM site. A map of the proposed service area in relation to the primary AM station and 2 mV/m AM service contours has been included in **Exhibit 13.4**.

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 13.3**.

## 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 utilizing the USGS 03 terrain database.

N. Lat. = 391516 W. Lng. = 940757 HAAT and Distance to Contour, FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	305.0	29.0	0.2000	-6.99	1.000	6.71
030	287.5	46.5	0.2000	-6.99	1.000	8.38
060	256.2	77.8	0.2000	-6.99	1.000	10.83
090	252.9	81.1	0.2000	-6.99	1.000	11.04
120	239.3	94.7	0.2000	-6.99	1.000	11.87
150	218.7	115.3	0.2000	-6.99	1.000	13.05
180	224.2	109.8	0.2000	-6.99	1.000	12.75
210	226.7	107.3	0.2000	-6.99	1.000	12.61
240	224.5	109.5	0.2000	-6.99	1.000	12.73
270	227.4	106.6	0.2000	-6.99	1.000	12.57
300	243.3	90.7	0.2000	-6.99	1.000	11.64
330	280.6	53.4	0.2000	-6.99	1.000	9.07
Ave El= 248.86 M HAAT= 85.14 M AMSL= 334 M						