

# **ENGINEERING REPORT**

## **FM Translator Minor Change CP Modification Application**

**For**

**K295BI – Kearney, NE**  
File No. BPFT-20150831ABC  
Facility ID No. 142187

November, 2015

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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 an Minor Change Construction Permit (CP) Modification Application for FM Translator K295BI – Kearney, NE, (BPFT- 20150831ABC), Facility ID #142187. K295BI has a construction permit for operation on Channel 295D, 106.9 MHz, with an ERP of 0.25 kW at a center of radiation (COR) of 709 meters AMSL. It is proposed to move to a different tower site, change center of radiation (COR) to 783 meters AMSL, and with a directional antenna at an ERP of 250 watts. K295BI will operate with a Nicom, Model BKY3P-1, slant 45°, one bay antenna. The translator will rebroadcast primary station KRVN(AM), Lexington, NE, 880 kHz, (Facility ID No. 48002) as a fill-in Translator. The translator will serve the community of Kearney, NE.

The facility will be located on an existing structure. A copy of the Antenna Structure Registration (ASR #1258437) 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 authorized construction permit 60 dBu contour versus the proposed amended 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 amended facility's 60 dBu contour versus the primary station, KRVN(AM)'s 2 mV/m contour and a 25 mile radius from the KRVN(AM) transmitter 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. A Nicom BKY3-1, single bay antenna with a slant 45° mounting, with the major lobe oriented at 190° T. will be employed for directional operation.

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 §1.1310 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. = 404342.0 W. Lng. = 990747.0 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	678.0	104.8	0.0132	-18.79	0.230	6.41
030	672.8	110.0	0.0132	-18.79	0.230	6.57
060	659.2	123.6	0.0121	-19.17	0.220	6.78
090	653.2	129.6	0.0324	-14.89	0.360	8.85
120	652.7	130.1	0.0992	-10.03	0.630	11.65
150	657.0	125.8	0.1936	-7.13	0.880	13.49
180	661.8	121.0	0.2450	-6.11	0.990	14.05
210	668.9	113.9	0.2352	-6.29	0.970	13.51
240	675.7	107.1	0.1640	-7.85	0.810	12.00
270	693.0	89.8	0.0702	-11.54	0.530	8.96
300	688.0	94.8	0.0210	-16.77	0.290	6.81
330	679.9	102.9	0.0121	-19.17	0.220	6.22

Ave El= 670.01 M HAAT= 112.79 M AMSL= 782.8