

# **ENGINEERING REPORT**

## **FM Translator Construction Permit Application**

**K228DY – Newton, KS**  
License No. BLFT-20041227ABJ  
Facility ID No. 142769

October, 2014

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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 Construction Permit Application for FM Translator K228DY – Newton, KS (Facility ID: 142769), License No BLFT-20041227ABJ. K228DY is presently licensed to operate on CH228D (93.5 MHz) with 0.250 kW of non-directional power at an antenna COR of 508 meters AMSL. Due to a frequency displacement caused by the recent commencement of KDGS(FM) – Andover, KS (CH228C3) under pending license BLH-20141015ACP, K228DY requests operation on minor change I.F. Channel CH281D (104.1 MHz). Non-directional power will remain 0.250 kW ERP (H&V) from the same site location, however, a correction in antenna COR height to 506 meters AMSL is requested. The translator will continue to rebroadcast primary station KYFW(FM) – Wichita, KS (Facility ID: 5098), CH202C3, as a non-commercial FM Translator.

The facility will remain located on the existing tower bearing Antenna Structure Registration Number 1225442. A copy of ASR #1225442 has been included in **Exhibit 13.1**. The vertical antenna system has been plotted 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 KEYN-FM – Wichita, KS (CH279C0) and KFXJ(FM) – Augusta, KS (CH283C2). General allocation details are found in **Exhibit 13.5**. Two (2) §74.1204(d) Second Adjacent Channel Given Interference Waivers are requested toward KEYN-FM and KFXJ(FM) as included in **Exhibit(s) 13.6a&b**. Full protection will be afforded each facility as the calculated interference area beyond 65 meters 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. The portion of the §74.1204(d) protection within 65 meters of the site is currently void of population, buildings (with the exception of the dedicated transmitter building) or major roads as noted in **Exhibit 13.6b**. 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 allocation, contour and HAAT calculations contained here-in.

The proposed 60 dBu contour of the Translator lies wholly outside of the KYFW(FM) primary service contour. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 13.4**.

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 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 NGDC 30 second terrain database.

N. Lat. = 380147    W. Lng. = 971853						
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	451.0	55.0	0.2500	-6.02	1.000	9.75
030	463.4	42.6	0.2500	-6.02	1.000	8.46
060	451.8	54.2	0.2500	-6.02	1.000	9.68
090	441.1	64.9	0.2500	-6.02	1.000	10.53
120	432.5	73.5	0.2500	-6.02	1.000	11.13
150	435.1	70.9	0.2500	-6.02	1.000	10.96
180	437.5	68.5	0.2500	-6.02	1.000	10.79
210	430.9	75.1	0.2500	-6.02	1.000	11.24
<b>240</b>	<b>425.5</b>	<b>80.5</b>	<b>0.2500</b>	<b>-6.02</b>	<b>1.000</b>	<b>11.61</b>
270	431.7	74.3	0.2500	-6.02	1.000	11.19
300	438.9	67.1	0.2500	-6.02	1.000	10.69
330	446.2	59.8	0.2500	-6.02	1.000	10.16
Ave El= 440.46 M    HAAT= 65.54 M    AMSL= 506 M						