ENGINEERING REPORT

FM Translator
Construction Permit
Modification Application

W256CI.C – Clarksville, TN
File No. BNPFT-20130820ABI
Facility ID No. 154860

Sole Change in Directional
Antenna Make & Model

January, 2014

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Table of Contents

(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 Construction Permit Modification Application for FM Translator Permit BNPFT-20130820ABI (Facility ID No. 154860). The authorized Construction Permit specifies operation on CH256D (99.1 MHz) – Clarksville, TN with 0.250 kW of directional power at an antenna COR of 247 meters AMSL. Due to problems with the custom directional antenna design concerning the authorized Shively 6812B-2DA (2-Bay) antenna, the applicant now requests use of a PSI FML-3DA(0.75sp) (3-Bay) antenna from the identical site and height in addition with the identical directional antenna pattern. Continued operation on Channel CH256D (99.1 MHz) with a power of 0.250 kW ERP is requested from the same site location. A new circularly polarized antenna with the identical directional antenna pattern will be utilized at the same antenna COR height of 247 meters AMSL. The translator will continue to rebroadcast primary station WCVQ(FM) – Fort Campbell, KY, CH300C1 (Facility ID No. 61253) as an FM Fill-In Translator.

The facility will be located on an existing tower which bears Antenna Structure Registration Number 1044988. A copy of ASR #1044988 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 WHOP-FM – Hopkinsville, KY (CH254C1). General allocation details are found in ***Exhibit 13.5***. A §74.1204(d) Second Adjacent Channel Given Interference Waiver is requested toward WHOP-FM as included in ***Exhibit(s) 13.8a&b***. Full protection will be afforded WHOP-FM as the calculated interference area beyond 100 meters will not reach the ground nor a seven (7) meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. The portion of the §74.1204(d) WHOP-FM protection within 100 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 13.8b***. There are two (2) facilities, existing or proposed, close enough to merit further study. Therefore supplemental contour protection studies have been provided toward W258AD.L – Clarksville, TN and W256CG.C – Dickson, TN as included in ***Exhibit(s) 13.6 and 13.7***. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

The applicant would like to note the use of the NED 03 second terrain database for all allocation, contour and HAAT calculations contained here-in.

The proposed 60 dBµ contour of the Translator lies wholly inside of the WCVQ(FM) Class C1 primary 60 dBµ contour. A map of the proposed service contour in relation to the primary station service contour has been included in ***Exhibit 13.4***. The Translator will rebroadcast WCVQ(FM) as an FM Fill-In Translator.

Discussion (continued)

The proposed operating parameters have been changed from the original "Short-Form" values, however the proposed service contour serves a portion of the present service area as seen 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 §1.1307(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 NED 03 second terrain database.

N. Lat. = 363231.0 W. Lng. = 871932.0
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	160.9	86.1	0.2500	-6.02	1.000	11.97
030	164.2	82.8	0.2500	-6.02	1.000	11.76
060	165.0	82.0	0.2500	-6.02	1.000	11.70
090	151.3	95.7	0.2500	-6.02	1.000	12.59
120	175.1	71.9	0.2500	-6.02	1.000	11.03
150	155.0	92.0	0.0400	-13.98	0.400	7.83
180	149.3	97.7	0.0100	-20.00	0.200	5.78
210	153.7	93.3	0.1600	-7.96	0.800	11.18
240	132.7	114.3	0.2500	-6.02	1.000	13.74
270	170.6	76.4	0.2500	-6.02	1.000	11.33
300	150.9	96.1	0.2500	-6.02	1.000	12.61
330	153.2	93.8	0.2500	-6.02	1.000	12.47

Ave El= 156.82 M HAAT= 90.18 M AMSL= 247