

ENGINEERING REPORT

FM Translator “Long Form” Filing for Original Construction Permit Application

NEW289D – Waco, TX
File No. BNPFT-20030317ADY
Facility ID No. 147263

Long-Form “Singleton Filing pursuant
to Auction 83 (AUC-03-83-D)

August, 2013

COPYRIGHT 2013

Table of Contents

Discussion of Report

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

Interference Requirements

Exhibit 13.1 - USGS Topographical Photo-Map of Proposed Site

Exhibit 13.2 - Vertical Plan of Existing Tower Structure

Exhibit 13.3 - Licensed vs Proposed Service Contour Study

Exhibit 13.4 - Proposed vs Primary Station Service Contour Study

Contour Overlap Requirements

Exhibit 13.5 - Tabulation of Proposed Allocation

Exhibit 13.6 - §74.1204(d) "Reciprocal" Waiver Request with APP292D –Waco, TX

Exhibit 13.7a - Manufacturer's Vertical Radiation Pattern Documentation (APP292D.P)

Exhibit 13.7b - Manufacturer's Vertical Radiation Pattern Documentation (CH289D.long-form)

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 an original Construction Permit "Long Form" Filing for FM Translator Application BNPFT-20030317ADY (Facility ID No. 147263). The pending "Short-Form" Application specified operation on CH289D (105.7 MHz) – Waco, TX with 0.170 kW of non-directional power at an antenna COR of 244 meters AMSL. Revised Operating Parameters will be requested in this "Long-Form" Filing. Continued operation on Channel CH289D (105.7 MHz) with a power of 0.250 kW ERP is requested from a corrected site location. A circularly polarized non-directional antenna will be utilized at the new antenna COR height of 246 meters AMSL. The translator will rebroadcast primary station KBBW(AM) – Waco, TX, 1010 kHz (Facility ID No. 1322) as an AM Fill-In Translator.

The facility will be located on an existing tower which bears Antenna Structure Registration Number 1201798. However in the process of preparing this application, it was determined ASR #1201798 had a 0.53 km error in site coordinates. Therefore the FAA has been notified of this error. Antenna Structure Registration will be corrected upon receipt of the revised FAA "Determination of No Hazard". A USGS Topographical Photo-Map of the site has been included in **Exhibit 13.1**. The vertical antenna system has been plotted in **Exhibit 13.2**.

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 pending Auction 83 Application APP292D.P – Waco, TX (FAC ID: 156281) File Number BNPFT-20030317HJT. General allocation details are found in **Exhibit 13.5**. A §74.1204(d) Third Adjacent Channel "Reciprocal" Given/Received Interference Waiver is requested toward APP292D.P as included in **Exhibit(s) 13.6** and **13.7(a,b)**. Full protection will be afforded both facilities as the calculated interference area for each will not reach the ground, nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna(s) as supplied by the antenna manufacturer. Copies of the antenna manufacturer's vertical radiation pattern for the APP292D.P - Waco, TX (BNPFT-20030317HJT) filing has been included in **Exhibit 13.7a**. Copies of the antenna manufacturer's vertical radiation pattern for this CH289D.long-form - Waco, TX proposal filing has been included in **Exhibit 13.7b**. A grant of this Waiver Request will not prohibit processing of either Form 349 Application. 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 inside of the KBBW(AM) primary daytime 2 mV/m contour and within a 25 mile radius around the AM site. 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 KBBW(AM) with a direct feed as an AM 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 NGDC 30 second terrain database.

N. Lat. = 313153.0 W. Lng. = 970701.0						
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	136.0	110.0	0.2500	-6.02	1.000	13.48
030	129.2	116.8	0.2500	-6.02	1.000	13.88
060	132.4	113.6	0.2500	-6.02	1.000	13.70
090	127.6	118.4	0.2500	-6.02	1.000	13.98
120	115.7	130.3	0.2500	-6.02	1.000	14.66
150	121.1	124.9	0.2500	-6.02	1.000	14.35
180	143.1	102.9	0.2500	-6.02	1.000	13.04
210	173.7	72.3	0.2500	-6.02	1.000	11.05
240	190.8	55.2	0.2500	-6.02	1.000	9.78
270	159.8	86.2	0.2500	-6.02	1.000	11.98
300	146.1	99.9	0.2500	-6.02	1.000	12.86
330	124.6	121.4	0.2500	-6.02	1.000	14.15
Ave El= 141.67 M HAAT= 104.33 M AMSL= 246 M						