

# **ENGINEERING REPORT**

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

**NEW300D – Dexter, MI**  
File No. BNPFT-20030314ANQ  
Facility ID No. 145494

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

August, 2013

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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 original Construction Permit “Long Form” Filing for FM Translator Application BNPFT-20030314ANQ (Facility ID No. 145494). The pending “Short-Form” Application specified operation on CH300D (107.9 MHz) with 0.093 kW ERP of non-directional power at an antenna COR of 304 meters AMSL. Revised Operating Parameters will be requested in this “Long-Form” Filing. Continued operation on Channel CH300D (107.9 MHz) with a power of 0.038 kW ERP is requested from a new site location. A circularly polarized non-directional antenna will be utilized at the revised antenna COR height of 333 meters AMSL. The translator will rebroadcast primary station WSAE(FM) – Spring Arbor, MI, CH295A (Facility ID No. 61994) as a regular (non-fill-in) non-commercial FM Translator.

The facility will be located on an existing communications tower which does not require Antenna Structure Registration. 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**. This proposal will not increase the overall structure height therefore 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 Canadian allotment/reservation AL/PRO300A – Windsor, ON. General allocation details are found in **Exhibit 13.5**. Full protection will be afforded the Canadian concerns as the proposed Translator 34 dBμ F(50:10) Interference Contour will not enter Canadian Soil as noted in **Exhibit 13.7**. There are two (2) existing facilities close enough to merit further study. Therefore supplemental contour protection studies have been provided toward co-channel station WCRZ(FM) – Flint, MI (CH300B) as included in **Exhibit 13.6(a)** and towards second adjacent channel station WGPR(FM) – Detroit, MI (CH298B) as included in **Exhibit 13.6(b)**. 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 the Allocation Study, Coverage maps, and HAAT calculations.

The proposed 60 dBμ contour of the Translator lies outside of the WSAE(FM) 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 proposed operating parameters have been changed from the original “Short-Form” values, however the proposed service contour serves a portion of the short form service area as seen in **Exhibit 13.3**.

As stated before, the facility is and will remain within 320 km of the common border between the United States and Canada. However, full protection has been afforded all Canadian concerns as noted in **Exhibit 13.7** as the 34 dBμ f(50:10) contour does not enter Canadian Soil. A tabulation of the proposed 34 dBμ f(50:10) contour will be supplied upon request.

**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).

## Discussion (continued)

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 HAAT tabulation has been taken from the NED 03 second terrain database. The max HAAT value has been calculated to be 81.3 meters.

N. Lat. = 421518.0    W. Lng. = 835003.0						
HAAT and Distance to Contour,						
3-16 km, 51 pts Method - NED 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	279.6	53.4	0.0380	-14.20	1.000	5.92
030	280.6	52.4	0.0380	-14.20	1.000	5.86
060	275.1	57.9	0.0380	-14.20	1.000	6.15
090	264.4	68.6	0.0380	-14.20	1.000	6.66
120	260.7	72.3	0.0380	-14.20	1.000	6.83
150	251.7	81.3	0.0380	-14.20	1.000	7.25
180	264.3	68.7	0.0380	-14.20	1.000	6.66
210	273.2	59.8	0.0380	-14.20	1.000	6.25
240	290.9	42.1	0.0380	-14.20	1.000	5.23
270	279.6	53.4	0.0380	-14.20	1.000	5.92
300	273.4	59.6	0.0380	-14.20	1.000	6.24
330	270.3	62.7	0.0380	-14.20	1.000	6.38
Ave El= 272.00 M    HAAT= 61.00 M    AMSL= 333						