

# **ENGINEERING REPORT**

## **FM Translator Construction Permit Modification Application**

**W252CN.C – Holt, MI (Lansing, MI)**  
Construction Permit File Number  
BNPFT-20130328ABP  
Facility ID No. 145605

July, 2014

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# **Table of Contents**

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Discussion of Report

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

**Interference Requirements**

Exhibit 13.1 - Copy of Existing Antenna Structure Registration

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 - Contour Protection Studies Toward WNWN-FM.L – Coldwater, MI

Exhibit 13.7 - Directional Antenna Pattern Documentation

**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 a minor Construction Permit Modification Application for FM Translator W252CN.C – Holt, MI, Construction Permit File Number BNPFT-20130328ABP (Facility ID No. 145605). W252CN.C is authorized licensed to operate on CH252D (98.3 MHz) with 0.080 kW of circularly polarized (H&V) non-directional power at an antenna COR of 312 meters AMSL. An alternate site and increase in power will be requested in this minor Form 349 Filing. Continued operation on Channel CH252D (98.3 MHz) with a power of 0.170 kW ERP (H&V) is requested from a new site location and new antenna COR height of 304 meters AMSL. A new directional antenna pattern will be employed. The translator will continue to rebroadcast Primary Station WSAE(FM) – Spring Arbor, MI CH295A (Facility ID No. 61994) as a non-commercial “regular” or non-fill-in FM Translator.

The facility will be located at the existing tower bearing Antenna Structure Registration Number 1275320. A copy of the existing ASR 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. General allocation details are found in **Exhibit 13.5**. There is one (1) facility existing or proposed, close enough to merit further study. Therefore supplemental contour protection studies have been provided toward first adjacent channel protection WNNW-FM.L – Coldwater, MI as included in **Exhibit 13.6**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

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

The proposed 60 dB $\mu$  contour of the Translator lies wholly outside of the WSAE(FM) primary daytime 60 dB $\mu$  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 WSAE(FM) directly off-air as a non-fill-in FM Translator.

Regarding protection of international concerns, the facility is and will remain within 320 km of the common border between the United States and Canada. The applicant certifies the proposed Translator 34 dB $\mu$  F(50:10) interference contour does not enter Canadian territory. Documentation of the proposed 34 dB $\mu$  F(50:10) interference contour will be supplied upon request.

The proposed operating parameters have been changed from the authorized 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 USGS 03 second terrain database.

N. Lat. = 424246.0    W. Lng. = 843649.0 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	256.0	48.0	0.0550	-12.59	0.569	6.12
030	258.5	45.5	0.0550	-12.59	0.569	5.95
060	260.7	43.3	0.1200	-9.21	0.840	7.03
090	260.5	43.5	0.1200	-9.21	0.840	7.04
120	264.9	39.1	0.1700	-7.70	1.000	7.29
150	272.7	31.3	0.1700	-7.70	1.000	6.56
180	271.2	32.8	0.1700	-7.70	1.000	6.70
210	269.3	34.7	0.1700	-7.70	1.000	6.87
240	265.6	38.4	0.1700	-7.70	1.000	7.22
270	266.2	37.8	0.1700	-7.70	1.000	7.16
300	254.6	49.4	0.0800	-10.97	0.686	6.81
330	253.0	51.0	0.0800	-10.97	0.686	6.92
Ave El= 262.75 M    HAAT= 41.25 M    AMSL= 304						