

ENGINEERING REPORT

FM Translator Minor Construction Permit Modification Application

for

**W269CS.C – Galesburg, MI
(Facility ID: 145671)**

File No. BNPFT-20130814AAD

March, 2015

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(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 W269CS.C – Galesburg, MI, File No. BNPFT-20130814AAD. W269CS.C – Galesburg, MI is presently authorized to operate on Channel 269D, (101.7 MHz), with 0.120 kW of non-directional, circularly polarized power with an antenna COR of 296 meters AMSL. This Construction Permit modification application requests a new site location and operation on the same frequency of CH269D (101.7 MHz) with 0.080 kW ERP (H&V) at 292 meters AMSL. A new Nicom BKG77/2, two bay, half wave spaced, non-directional antenna will be utilized. The translator will rebroadcast new primary station WJKN-FM – Spring Arbor, MI, CH207A (Facility ID No. 91139) as a regular (non-fill-in) FM Translator. The Translator will continue to serve the community of Galesburg, MI.

The translator will be mounted on an existing grain silo complex which does not require Antenna Structure Registration Number. A copy of USGS Topographic Mapping and Aerial Photography of the existing silo complex has been included in **Exhibit 13.1** to **13.2**. The vertical antenna system has been plotted in **Exhibit 13.3**. TOWAIR has been consulted and Antenna Structure Registration is not required for this operation.

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 WMUK(FM) – Kalamazoo, MI (CH271B). General allocation details are found in **Exhibit 13.6**. A §74.1204(d) Second Adjacent Channel Given Interference Waiver Request toward WMUK(FM) has been included in **Exhibit 13.7**. Full protection will be afforded the facility as the calculated interference area will not reach the ground nor a 5 meter artificial plane representing a standard 1.5 story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's antenna specifications has been included in **Exhibit 13.8**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

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

The proposed 60 dBμ contour of the Translator lies wholly outside of the WJKN-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 13.5**. The Translator will rebroadcast WJKN-FM directly off-air as a regular (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 dBμ F(50:10) interference contour does not enter Canadian territory. Documentation of the proposed 34 dBμ F(50:10) interference contour will be supplied upon request.

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 13.4**.

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 §1.1310 of the Commission's rules. ***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.

N. Lat. = 421552.0 W. Lng. = 852547.0						
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	271.4	20.3	0.0800	-10.97	1.000	5.33
030	262.3	29.4	0.0800	-10.97	1.000	5.33
060	266.7	25.0	0.0800	-10.97	1.000	5.33
090	292.5	-0.8	0.0800	-10.97	1.000	5.33
120	292.6	-0.9	0.0800	-10.97	1.000	5.33
150	285.2	6.5	0.0800	-10.97	1.000	5.33
180	273.0	18.7	0.0800	-10.97	1.000	5.33
210	261.2	30.5	0.0800	-10.97	1.000	5.36
240	261.1	30.6	0.0800	-10.97	1.000	5.38
270	257.1	34.6	0.0800	-10.97	1.000	5.69
300	250.4	41.3	0.0800	-10.97	1.000	6.20
330	270.8	20.9	0.0800	-10.97	1.000	5.33
Ave El= 270.37 M HAAT= 21.33 M AMSL= 291.7 M						