

ENGINEERING REPORT

FM Translator Minor Construction Permit Modification Application

for

**K253CB.C - Roseau, MN
(Facility ID: 140690)**

Site Change & New
Directional Antenna Pattern

September 2016

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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 K253CB.C - Roseau, MN (Facility ID: 140690). This Translator proposal requests a new site location and a new directional antenna pattern. Continued operation on CH253D (98.5 MHz) with a power of 0.012 kW ERP (H&V) at 361 meters AMSL is proposed. The regular Translator will rebroadcast Primary Station KBHW(FM) - International Falls, MN, CH258C1 (99.5 MHz), Facility ID No. 42902, via K204EL - Warroad, MN (88.7 MHz), Facility ID No. 6435 as a non-commercial, non-fill-in Translator. The Translator will serve the community of Roseau, MN.

The Translator will be mounted on the existing tower bearing Antenna Structure Registration Number 1023323. A copy of the existing ASR has been included in **Exhibit 13.1**. The vertical antenna system has been included in **Exhibit 13.2**. As this proposal will not increase the overall tower height, notification to the FAA is not believed required.

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**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

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

The proposed 60 dBu contour of the Translator lies wholly outside of the primary service contour. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 13.4**.

Regarding protection of international concerns, the facility will be located within 320 km from the common border between the United States and Canada. Pursuant to §74.1235(d)(3), the proposed 34 dBμ F(50:10) interference contour will not exceed 60 km in any direction toward Canada, nor will the 34 dBμ F(50:10) interference contour enter Canadian territory. This §74.1235(d)(3) study has been included in **Exhibit 13.6**. No further international showings are believed required.

The proposed operating parameters have been changed from the present values, however the proposed service contour serves a portion of the present service area as seen in **Exhibit 13.4**.

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 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. = 485110.0 W. Lng. = 954613.0						
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	317.1	43.9	0.0043	-23.65	0.600	3.11
030	318.0	43.0	0.0077	-21.15	0.800	3.54
060	319.3	41.7	0.0120	-19.21	1.000	3.89
090	323.1	37.9	0.0120	-19.21	1.000	3.70
120	328.9	32.1	0.0120	-19.21	1.000	3.40
150	324.8	36.2	0.0120	-19.21	1.000	3.61
180	325.1	35.9	0.0120	-19.21	1.000	3.59
210	333.1	27.9	0.0120	-19.21	1.000	3.30
240	332.2	28.8	0.0120	-19.21	1.000	3.30
270	322.1	38.9	0.0120	-19.21	1.000	3.75
300	315.6	45.4	0.0120	-19.21	1.000	4.08
330	315.6	45.4	0.0059	-22.31	0.700	3.42
Ave El= 322.91 M HAAT= 38.09 M AMSL= 361						