

ENGINEERING REPORT

FM Translator Minor Construction Permit Application

for

K259BW.L – Yankton, SD

License No. BLFT-20090922ACV

September, 2009

COPYRIGHT 2009

MUNN-REESE, INC.
Broadcast Engineering Consultants
Coldwater, MI 49036

TABLE OF CONTENTS

Discussion of Report

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

Interference Requirements

Exhibit 12.1 - Copy of Existing Antenna Structure Registration

Exhibit 12.2 - Vertical Plan of Antenna System and Support Tower

Exhibit 12.3 - Present vs Proposed Service Contour Study

Exhibit 12.4 - Proposed vs Primary Station Service Contour Study

Contour Overlap Requirements

Exhibit 12.5 - Tabulation of Proposed Allocation

Exhibit 12.6 - §74.1204(d) Waiver Request Toward KIKN-FM
& Vertical Radiation Pattern from Antenna Manufacturer.

TV Channel 6 Protection Requirements (See Discussion)

Unattended Operation Requirements (See Discussion)

Multiple Translator Requirements (See Discussion)

RF Radiation Study Requirement

Exhibit 16.1 - 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 application for FM translator K259BW, Yankton, SD, License No. BLFT-20090922ACV. K259BW presently operates on 99.7 MHz with 5 watts of non-directional power with an antenna COR of 408 meters AMSL. A new site location and AMSL height are requested. Operation on CH260D with 250 watts ERP at 636 meters AMSL is requested. The facility will operate with a circularly polarized, non-directional, two bay, 0.9λ (wavelength) spaced antenna. The translator will continue to rebroadcast FM station WNAX-FM, Yankton, SD, CH281C1, facility ID No. 57839 and be licensed to the community of Yankton, SD.

The proposed tower is presently registered under Antenna Structure Registration 1035330. As this facility will not increase the overall tower height, it is believed the FAA need not be notified. A copy of the existing ASR has been included in **Exhibit 12.1**. A copy of the vertical antenna system has been included in **Exhibit 12.2**.

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 KIKN-FM – CH263C1, Salem, SD. General allocation details are found in **Exhibit 12.5**. A §74.1204(d) Third Adjacent Channel Given Interference Waiver is requested toward KIKN-FM as demonstrated in **Exhibit 12.6**. The exhibit shows the calculated interference area will not reach the ground nor an artificial 7 meter AGL plane representing a standard second story house when taking into account the manufacturer supplied downward radiation characteristics for the proposed Nicom BKG77/2 two bay 0.9λ (wavelength) spaced antenna. A copy of the vertical downward radiation pattern has also been included in **Exhibit 12.7**. 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 all allocation protection studies as well as all contour and HAAT calculations employed in this Form 349 filing.

The proposed 60 dBu contour of the translator lies inside of the WNAX-FM primary 60 dBu service contour therefore qualifying for “Fill-In” translator status. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 12.4**.

Regarding protection of international concerns, the facility is and will remain more than 320 km from the common border between the United States and Canada or Mexico. As a result, no further international showings are required.

The proposed operating parameters have been changed from the licensed values, however the proposed 60 dBu service contour serves a portion of the present 60 dBu service area as seen in **Exhibit 12.3**.

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.

Discussion (continued)

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 16.1** 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. = 425446 W. Lng. = 971858 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	403.6	232.4	0.2500	-6.02	1.000	19.95
030	386.3	249.7	0.2500	-6.02	1.000	20.66
060	367.4	268.6	0.2500	-6.02	1.000	21.40
090	354.6	281.4	0.2500	-6.02	1.000	21.87
120	354.4	281.6	0.2500	-6.02	1.000	21.88
150	361.2	274.8	0.2500	-6.02	1.000	21.63
180	398.2	237.8	0.2500	-6.02	1.000	20.18
210	373.6	262.4	0.2500	-6.02	1.000	21.16
240	368.5	267.5	0.2500	-6.02	1.000	21.35
270	410.1	225.9	0.2500	-6.02	1.000	19.67
300	400.8	235.2	0.2500	-6.02	1.000	20.07
330	381.8	254.2	0.2500	-6.02	1.000	20.84
Ave El= 380.04 M HAAT= 255.96 M AMSL= 636 M						