

## **ENGINEERING REPORT**

FM Translator Minor Construction  
Permit Modification for  
**K227AN.C – Lynd, MN**  
Change is Site Location

File No. BNPFT-20030821ACF

**March, 2005**

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# **TABLE OF CONTENTS**

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Discussion of Report

**FM Booster/Fill-in Translator Requirements** (None)

**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 - Contour Protection Maps Towards Select Stations

**TV Channel 6 Protection Requirements** (Not Required)

**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**

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This firm has been retained to prepare the required engineering report in support of a minor construction permit modification for FM translator K227AN, Lynd, MN, File No. BNPFT-20030821ACF. The translator will continue to rebroadcast parent station KNWC-FM, Sioux Falls, SD, 96.5 MHz. The proposed translator will operate on Channel 227D with 140 watts at a max HAAT of 143 meters.

It has been determined the translator may be used in the area without interference to any existing FM broadcast station or translator. Allocation details are found in **Exhibit 12.5**. The translator site is outside of the primary contour, and the 1 mV/m (60 dBu) contour extends beyond the primary station 1 mV/m contour. A map of the proposed service area in relation to the primary station service contour has been included in **Exhibit 12.4**.

The proposed translator is not located within 320 kilometers of the border between the United States of America and Canada or Mexico.

The translator will employ a two bay Jampro JLST-2 circularly polarized antenna. The antenna will be mounted on an existing tower bearing Antenna Structure Registration No. 1009337. The antenna will not increase the overall height, therefore the FAA need not be notified. A copy of the existing ASR has been included in **Exhibit 12.1**.

The proposed facility meets the requirements of the Rules for operation without a licensed operator in attendance. The transmitter site may be reached promptly at all hours and in all seasons. The transmitter will be equipped with proper control and interface circuits which will place the translator in a non-radiating condition in the event the proper incoming signal is absent. The transmitter and controls will be placed in a locked area to prevent unauthorized tampering with the equipment. A person or persons will be assigned to observe the signals of the station each day, and to take corrective action if required. The equipment proposed for operation is listed in the type-approved list of the Commission.

Prompt suspension of the translator operation will be made, in the event of equipment failure that could cause operation outside the specifications of the Rules. The data contained in this report is responsive to the Rules of the Commission, and provides information for FCC Form 349.

**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 §1.1310 of the Commission's rules. **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. = 44 19 40    W. Lng. = 95 49 30						
HAAT and Distance to Contour - FCC Method - 30 Arc Sec.						
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	373.5	132.5	0.1400	-8.54	1.000	12.77
<b>030</b>	<b>363.5</b>	<b>142.5</b>	<b>0.1400</b>	<b>-8.54</b>	<b>1.000</b>	<b>13.27</b>
060	364.3	141.7	0.1400	-8.54	1.000	13.23
090	378.8	127.2	0.1400	-8.54	1.000	12.52
120	423.5	82.5	0.1400	-8.54	1.000	10.21
150	448.0	58.0	0.1400	-8.54	1.000	8.61
180	457.9	48.1	0.1400	-8.54	1.000	7.75
210	464.5	41.5	0.1400	-8.54	1.000	7.14
240	476.2	29.8	0.1400	-8.54	1.000	6.13
270	467.4	38.6	0.1400	-8.54	1.000	6.89
300	448.1	57.9	0.1400	-8.54	1.000	8.61
330	401.5	104.5	0.1400	-8.54	1.000	11.42
Ave El= 422.27 M    HAAT= 83.73 M    AMSL= 506						