

AM BROADCAST STATION LICENSE

Call Sign : KTOE

LICENSEE: Minnesota Broadcasting Company

- 1. Community of License. . . : Mankato, MN
- 2. Transmitter location. . . . : 5.6 km East of Mankato  
on U.S. HWY 14  
Mankato, MN

North Latitude. . . . . : 44° 10' 06"  
West Longitude . . . . . : 93° 54' 37"

3. Transmitter(s): Type Accepted. See Sections 73.1660, 73.1665 and 73.1670 of the Commission's rules)

4. Main Studio Location: (See Section 73.1125)  
3.5 mi East of Mankato  
U.S. Highway 14 East

5. Remote control location

6. Antenna and ground system: Attached

7. Obstruction marking and lighting specifications - FCC Form 715, paragraphs: 1, 3, 11 & 21.

8. Frequency. . . . . : 1420 kHz

9. Nominal power (kW). . . . . : 5 Day 5 Night

Antenna input power (kW) :

5.4	Day	<input checked="" type="checkbox"/> Non-directional antenna : current	7.1	amperes: resistance	99	ohms.
		<input type="checkbox"/> Directional antenna :				
5.4	Night	<input type="checkbox"/> Non-directional antenna : current	10.4	amperes: resistance	50	ohms.
		<input checked="" type="checkbox"/> Directional antenna :				

10. Hours of operation : Specified in BP-920818AB

11. Conditions. . . . . :

Subject to the provisions of the Communications Act of 1934, as amended, subsequent Acts, Treaties, and Commission rules made thereunder, and further subject to conditions set forth in this license,<sup>1</sup> the LICENSEE is hereby authorized to use and operate the radio transmitting apparatus herein described for the purpose of broadcasting for the term ending 3 A.M. Local Time April 1, 1997.

The Commission reserves the right during said license period of terminating this license or making effective any change, or modification of this license which may be necessary to comply with any decision of the Commission rendered as a result of any hearing held under the rules of the Commission prior to the commencement of this license period.

The license is issued on the licensee's representation that the statements contained in the licensee's application are true and that the undertakings therein contained so far as they are consistent herewith, will be carried out in good faith. The licensee shall, during the term of this license, render such broadcasting service as will serve the public interest, convenience, or necessity to the full extent of the privileges herein conferred.

This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequency designated in the license beyond the term hereof, nor in any other manner than authorized herein. Neither the license nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. This license is subject to the right of control by the Government of the United States conferred by section 606 of the Communications Act of 1934, as amended.

JDS:rao

FEDERAL  
COMMUNICATIONS  
COMMISSION



<sup>1</sup> This license consists of this page and pages

Dated: JUL 20 1994

1. DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

**No. and Type of Elements:** Three (3) vertical, guyed, series-excited steel radiators of uniform cross section.  
 Theoretical RMS based on an equivalent loss of 3.12 ohms:  
 640.52 mV/m/km. Modified Standard RMS: 700.29 mV/m/km.  
 Q = 22.36

**Height above Insulators:** 60.96 m (104°).

**Overall Height:** 61.86 m

**Spacing and Orientation:** With tower #2 (C) as reference, tower #1 (NW) is spaced 90° apart on a line bearing 305° T; tower #3 (SE) is spaced 90° apart on a line bearing 135° T.

**Non-Directional Antenna:** Use tower #3(SE) for daytime operation. Theoretical RMS: 315.43 mV/m/km for 1 kw.

**Ground System consists of** 120 equally spaced, buried, copper radials 83.8 m (142.8°) in length except where terminated by property boundaries or where intersecting radials are shortened and bonded to common transverse copper strap midway between towers.

2. THEORETICAL SPECIFICATIONS

Tower	#1 (NW)	#2 (C)	#3 (SE)
<b>Phasing:</b>			
Night:	-10.8°	-124.8°	0.0°
<b>Field Ratio:</b>			
Night:	0.712	0.329	1.000

3. OPERATING SPECIFICATIONS

Phase Indication*:	-12°	-110°	0°
<b>Antenna Base</b>			
Current Ratio:	0.829	0.200	1.00
<b>Antenna Monitor Samples</b>			
Current Ratio:	0.78	0.18	1.00

\*As indicated by Potomac Instruments AM-19(210) Antenna Monitor. Antenna sampling system approved under Section 73.68(b) of the Rules.

**DESCRIPTION OF AND FIELD INTENSITY AT MONITORING POINTS:**

**Direction of 103° True North.** From the entrance to the transmitter site, proceed east on U.S. Highway 14 of 2.2 miles to the monitor point. The monitor point is located on the South side of the road near some telephone cable equipment as shown in the photograph. This point is point number 310 and is located 2.2 miles from the center of the array. The field intensity measured at this point should not exceed 31.8 mv/m.

**Direction of 130° True North.** From Monitor Point #1, retrace .65 miles west to the first four-way intersection on the east side of Eagle Lake. Turn South (left) and proceed .97 miles to the monitor point. This is point number 410 and is located 2.07 miles from the center of the array. The field intensity measured at this point should not exceed 82 mV/m.

**Direction of 158.5° True North.** From Monitor Point #2, proceed South 1.3 miles, following the curve in the road to its junction with State Highway 83. Continue North on highway 83 for .22 miles to the T-shaped intersection. The reading is taken on the southwest corner of the junction. This location is point number 511 and is located 2.24 miles from the center of the array. The field intensity measured at this point should not exceed 20 mVm.

**Direction of 316° True North.** From the entrance to the transmitter site, proceed east to the fourway intersection on the east edge of the station property. Turn North (left) and proceed for 1.0 miles. Turn West (left) and proceed 1.0 miles. The monitor point is located just north of this intersection on a minimum maintenance road. The reading is taken on the west side of the road. This is point number 1009 and is located 1.33 miles from the center of the array. The field intensity measured at this point should not exceed 192 mv/m.