

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

File No.: BL-14,071

STANDARD BROADCAST STATION LICENSE

Call Sign: **K B O Z**
Official No. **5056**
FACID/6775

NORTHERN SUN CORPORATION

343

Subject to the provisions of the Communications Act of 1934, subsequent Acts, and Treaties, and Commission Rules made thereunder, and further subject to conditions set forth in this license, ¹the LICENSEE

is hereby authorized to use and operate the radio transmitting apparatus hereinafter described for the purpose of broadcasting for the term ending 3 a.m. Local Time **April 1, 1980**

The licensee shall use and operate said apparatus only in accordance with the following terms:

- On a frequency of **1090** kHz.
- With nominal power of **5** kilo watts nighttime and **5** kilo watts daytime, common point antenna input power of **5.4** kilo watts - directional common point antenna nighttime antenna and antenna input power of **5** kilo watts non directional antenna antenna

- Hours of operation: **Unlimited;**
Average hours of sunrise and sunset:
Jan. 8:00am to 5:00pm; Feb. 7:30am to 5:45pm;
Mar. 6:45am to 6:30pm; Apr. 5:45am to 7:15pm;
May 5:00am to 7:45pm; June 4:30am to 8:15pm;
July 4:45am to 8:15pm; Aug. 5:30am to 7:30pm;
Sep. 6:00am to 6:45pm; Oct. 6:45am to 5:45pm;
Nov. 7:30am to 5:00pm; Dec. 8:00am to 4:45pm;
Mountain Standard Time (non-advanced)
- With the station located at: **Bozeman, Montana**
- With the main studio located at: **4.3 miles South, 2.5 miles West of P.O. in Bozeman, Montana.**
- Remote control point:

45	36	58
111	0	05 16 "
	0	"

7. Transmitter location:
4.3 miles South, 2.5 miles West of P. O. in Bozeman, Montana

8. Obstruction marking specifications in accordance with the following paragraphs of FCC Form 715: **1, 3, 11 & 21**

9. Transmitter(s): **GATES MW-5**
10. Conditions:

The Commission reserves the right during said license period of terminating this license or making effective any changes 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 or any decision rendered as a result of any such hearing which has been designated but not held, prior to the commencement of this license period.

This license is issued on the licensee's representation that the statements contained in 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 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. This license is subject to the right of use or control by the Government of the United States conferred by Section 606 of the Communications Act of 1934.

This license consists of this page and pages **2 & 3.**



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Call Sign: KB0Z

Date: 9-30-77

1. DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

D.A. N

No. and Type of Elements: Five vertical uniform cross-section, guyed, steel, series excited towers.

Height above Insulators: 240' {95.7°}

Overall Height: 245'

Nondirectional antenna: Center {no. 3}

Spacing and Orientation: Towers spaced 481.2' {192°} between elements on a line bearing 136 true.

Non-Directional Antenna:

Ground System consists of 120-125' buried copper radials plus 120-150' radials about base of each tower.

2. THEORETICAL SPECIFICATIONS

Phasing:	Tower	NW	NC	C	SC	SE
Night	{ 1 }	{ 2 }	{ 3 }	{ 4 }	{ 5 }	
	0	43.7°	86.5°	127.5°	156	
Field Ratio:	Night	1.0	3.193	4.253	2.818	0.80

3. OPERATING SPECIFICATIONS

Phase Indication*: 1/ -83.3° -40.6° 0° 40.9° 80.9°

Antenna Base

Current Ratio:	* 2/	0.231	0.754	1.00	0.732	0.227
Sample Current Ratio:* C	0.234	0.746	1.00	0.713	0.232	
Sample Current Deviation* 3/	0.0	0.0	0.0	0.0	0.0	0.0

Precision Adapter Attenuator Values: 83.14 25.65 18.8 26.86 83.87

*As indicated by Potomac Instr. AM-19{204} antenna monitor w/ adapter. A-19

- 1/ Permissible deviations from these values shall not exceed
- 2/ Permissible deviations from these values shall not exceed
- 3/ Permissible deviations from these values shall not exceed

Field monitoring equipment shall be available at all times and the field intensity at each of the monitoring points shall be measured at least once every seven days and an appropriate record kept of all measurements so made.

DIRECTION OF AND FIELD INTENSITY AT MONITORING POINTS:

Direction of 74.5° true North. Leaving the transmitter proceed north for a distance of 1.0 miles to the R.R. tracks. Turn east for a distance of 1.5 miles to Patterson Junction. Thence north for 0.5 miles to a right hand curve. Continue east 1.25 miles to street to right. Turn south for 0.5 miles to the Monitor Point. Distance from the transmitter site is 2.95 miles. The field intensity measured at this point should not exceed 3.2 mV/m.

Direction of 95° true North. Leaving Monitor Point Number 1, return north 0.5 miles. Thence turn east 0.3 miles to Sourdough Road. Turn south for 1.4 miles to the Monitor Point. This is location number 522 and lies at a distance of 3.30 miles from the transmitter. The field intensity measured at this point should not exceed 2.75 mV/m.

Direction of 100.5° true North. Leaving the Monitor Point number 2 continue southward on Sourdough Road for 0.6 miles to a tee. Turn east 0.6 miles to the Monitor Point. This is location number 625 and lies at a distance of 2.85 miles from transmitter. The field intensity measured at this point should not exceed 3.0 mV/m.

Direction of 121° true North. From Monitor Point number 3, turn about and proceed west for 2.1 miles to a crossroad by the old Leverich School. Turn south and follow along road for 1.2 miles to the Monitor Point. This is location number 723 and lies at a distance of 2.65 miles from transmitter. The measurement is taken in the middle of and at the end of the street. The field intensity measured at this point should not exceed 3.0 mV/m.

Direction of 136° true North. Leaving the Monitor Point number 4, return to the intersection with the Leverich School. Turn west 0.5 miles, thence south 0.6 miles to the monitor point. This is location number 818 and lies at a distance of 1.80 miles from the transmitter. The measurement is taken on the east shoulder of the highway. The tower line is visible from this location. The field intensity measured at this point could not exceed 6.1 mV/m.

Direction of 316° true North. Leaving the transmitter proceed west for a distance of 2.0 miles, thence north for 2.0 miles to the monitor point, at an intersection. This is location number 1521 and lies at a distance of 2.50 miles from transmitter. The measuring location is 100 feet from the intersection in an open field. The tower line is visible from this location. The field intensity measured at this point should not exceed 4.2 mV/m.