



# **OWL ENGINEERING & EMC TEST LABS, INC.**

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**CONSULTING COMMUNICATIONS ENGINEERS · EMC TEST LABORATORIES**

5844 Hamline Avenue North, Shoreview, MN 55126  
651-784-7445 • Fax 651-784-7541

ANSI RF Radiation Measurement Report

For Radio Stations KSLT Spearfish, SD

AUGUST 10, 2021

Prepared By: Garrett G. Lysiak, P.E.



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## Engineering Statement

On-site measurements were performed on the KSLT radio communications facility in Spearfish, SD. The radio station operates with a licensed output power of 100 Kw on a frequency on 107.1 MHz (296). The facility is a multiple station site. The station antenna was recently replaced with an ERI SHPX-10C6 with a center of radiation of 169 meters that necessitated a RF radiation study be performed to determine RF Radiation compliance.

The tower is surrounded by a locked fence which restricts access to the public. This site would be considered Controlled Location for measurement purposes.

There is also signage warning of RF radiation as well as the Antenna Structure Registration required information on a posted sign.

The measurements were performed on August 7, 2021 and I was assisted by Mr. Tracy Krsnak, the station engineer.

## Measurement Procedures

The measurement procedures outlined in FCC Bulletin OET-65 were followed in obtaining the Radiation measurements. A Holaday HI-30112 Broadband Exposure Meter with an E-field probe was used to obtain the measurements. This meter complies with all the requirements contained in FCC Bulletin OET 65. The transmitters were verified to be operating at the licensed operating power. The measurements were performed around the base of the tower fence, at head height, in order to obtain the radiation field that a member of the general public could be exposed to. The survey meter has a peak-reading option, which allowed the measurement of the peak value to be saved during the probe movement.

The area around the transmitter, coax fed-line and connectors was measured and no measurements were found to be near the Controlled radiation limit of 1,000  $\mu\text{w}/\text{cm}^2$ , in fact the measured values was well below the General Public limit of 200  $\mu\text{w}/\text{cm}^2$ .

Several radials were measured from the tower at distances up to 35 meters which included the calculated distance that the antenna pattern was calculated to reach ground level.

All of the measurements demonstrated that the ANSI RF Radiation limit 200  $\mu\text{w}/\text{cm}^2$  for the general population was not exceeded at any point that was accessible to the general public. The maximum reading was 20  $\mu\text{w}/\text{cm}^2$  which is 10% of the general public limit.



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## Summary

Based on my on-site measurements of the KSLT combined communications facility it is my professional opinion that the communications facility would be in complete compliance for RF radiation under the ANSI/IEEE C95.1-1992 standard since no measured value exceeded the maximum exposure level of  $200 \mu\text{w}/\text{cm}^2$  at any point near the base of the tower area that the general public could gain access or the surrounding area at ground level.

A handwritten signature in black ink that reads "Garrett G. Lysiak". The signature is written in a cursive, flowing style.

Garrett G. Lysiak, P.E.  
August 10, 2021