

**ELECTROMAGNETIC FIELD MEASUREMENTS  
KZQL / KDAD TRANSMITTER SITE  
THE CASPER RADIO GROUP, INC.  
AUGUST 11, 2011**

**Introduction**

On August 10, 2011 radiofrequency power density measurements were made around the Casper Radio Group FM transmitting facility on Casper Mountain just south of Casper, Wyoming. The measurements were made between the hours of 8:00 AM and 10:00 AM. During this time, both KDAD and KZQL were turned on and operating at the parameters specified in their respective construction permits.

**Measurement Procedures**

Measurement procedures outlined in **OET BULLETIN 65, (EDITION 97-01)**, ("OET 65") **"Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields"**, **ANSI/IEEE Std C95.3-1991, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields--RF and Microwave**, and **NCRP Report No. 119, "A Practical Guide to the Determination of Human Exposure to Radiofrequency Fields"** were used for the measurements taken in the surrounding area of the Casper Radio Group transmitter site. Spatially averaged measurements were made at the points where the highest fields were found.

According to the ANSI C95.3 guidelines (reaffirmed in OET 65) measurements to determine exposure compliance are to be made at distances 20 cm or greater from any object. This is to assure that the measurements are not contaminated by re-radiation from conductive objects.

**Test Equipment Used**

A NARDA Model 8718B Electromagnetic Radiation Survey Meter with a NARDA Model A8742D Isotropic Shaped Electric Field Probe was used to make the measurements. The NARDA A8742 probe provides an output proportional to **CFR 47 §1.1310 Radiofrequency Radiation Exposure Limits** (Occupational/Controlled Environments) maximum permissible exposure (MPE) over a frequency range from 300 kHz to 3 GHz. The isotropic response of the NARDA A8742 probe is +/-0.75dB.

The NARDA Model 8718B Electromagnetic Radiation Survey Meter allows for accurate and repeatable spatially averaged measurements through the use of its time averaging feature. A single key stroke implements the meter's time averaging function as the probe is swept through an area that approximates that of the human body. Spatial Point fields are also stored by the meter during the spatially averaged measurement. The NARDA diode probes, such as the Model 8742, are designed to provide signal detection on a square law basis and yield accurate readings of fields from multiple sources.

Item	Make/Model	Serial Number	Calibration Date
RF Survey Meter	Narda 8718B	02001	April 2010
Isotropic Shaped Electrical Field Probe (FCC 1997 Controlled Environments): 300kHz-3 Ghz	Narda A8742D	02101	August 2011

**Results**

The highest measured field around the Casper Radio Group FM transmitter site was found approximately 59 feet (18m) east of the tower. At this point, the spatially averaged field was found to be 1.2% of the Occupational/Controlled Environment MPE. This translates to 6% of the General Population/Uncontrolled Environment MPE<sup>1</sup>.

These measurements show that the site is in compliance with the FCC General Population/Uncontrolled MPE.

**Statement of Engineer**

This Engineering Report regarding radiofrequency field measurements around the Casper Radio Group FM transmitting site on Casper Mountain has been prepared by myself. I am an experienced radio engineer and all representations contained herein are true to the best of my knowledge.

August 11, 2011



Aaron A. Ishmael  
Director of Engineering  
The Casper Radio Group, Inc.

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<sup>1</sup> According to **CFR 47 §1.1310 Radiofrequency Radiation Exposure Limits**, the General Population/Uncontrolled Environment MPE is 20% of the Occupational/Controlled Environment MPE.