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**ELECTROMAGNETIC FIELD MEASUREMENTS
AT THE LOOKOUT MOUNTAIN TRANSMITTER SITE
NEAR GOLDEN, COLORADO**

**ENTERCOM DENVER LICENSE, LLC
FOR FM STATION KALC**

OCTOBER 2009

Introduction

On October 5, 2009 ground-level radiofrequency power density measurements were made around the KWGN/Citicasters tower complex at the Lookout Mountain transmitter site near Golden, Colorado. The measurements were made between the hours of 12:00 PM and 2:00 PM. The weather was cloudy, with an estimated temperature in the upper 50s. Very light precipitation occurred at times during the measurements, with meaningful rainfall not occurring until after the measurements were completed.

The main KALC antenna is installed on the KWGN-TV tower, a 450 foot structure which bears FCC Antenna Structure Registration (ASR) number 1044149. Due to work being performed in connection with the installation of a new antenna for KWGN-TV digital Ch 34 operation, it is necessary for KALC to operate at times from an adjacent 190 foot tower (ASR number 1033691, owned by Citicasters Co.) which has a broadband panel antenna system which is shared by KTCL 227C1 Wheat Ridge, KPTT 239C0 Denver, KCUV 272A Greenwood Village, KRFX 278C0 Denver, and the auxiliary (backup) operation for KBPI 294C Denver. The measurements described herein were performed in order to verify whether operation of KALC through this panel antenna system at 25 kW ERP would be in compliance with the applicable FCC Maximum Permissible Exposure (MPE).

Several other FM and TV stations operate from towers located on a separate knoll more than 1000 feet to the south of the KWGN/Citicasters complex. Due to the distance separation, those stations are not believed to be meaningful contributors to exposure levels at the KWGN/Citicasters complex.

With the exception of KWGN-TV (which was presumed to be operating under its 450 kW STA pending installation of its 1000 kW full-power antenna), to the best of our knowledge the high-power FM and TV transmitters at the KWGN/Citicasters complex were operating at their licensed or authorized power as the measurements were made. FM station KBPI, whose main antenna is (like that of KALC) located on the KWGN-TV tower, was operating via its backup facility on the Citicasters tower.

Site Access and Location

The Lookout Mountain transmitter site is located on a hilltop overlooking the city of Golden. There is public road access reaching a locked gate which prevents casual vehicle access to the towers. While the locked gate at the road can be bypassed by an individual on foot, the individual tower sites (i.e. KWGN and Citicasters) are fenced with locked gates to prevent public access.

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 at the KWGN/Citicasters complex. 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 (S/N 0001) with a NARDA Model 8742D Isotropic Shaped Electric Field Probe (S/N 5003) were used to make the measurements. The NARDA 8742D probe provides an output proportional to **CFR 47 §1.1310 Radiofrequency Radiation Exposure Limits** (Uncontrolled Environments) maximum permissible exposure (MPE) over a frequency range from 300 kHz to 2.7 GHz.

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.

Measured Fields

Measurements were made both within the two fenced compounds of the KWGN and Citicasters towers, as well as in publicly-accessible areas on the transmitter site side of the road gate and along the road perimeter. At no point were spatially-averaged fields found which exceeded the FCC General Population/Uncontrolled Environment MPE. The location of the highest RF exposure condition found during the survey was on an east-facing metal "deck" of the KWGN transmitter building, at which location the measured exposure condition was 22.6% of the FCC General Population/Uncontrolled Environment MPE. This location is inside the fence surrounding the KWGN tower site, a controlled-access area. The location of the highest RF exposure condition found in accessible areas was 17% of the FCC General Population/Uncontrolled Environment MPE.

These measurements demonstrate that the KWGN/Citicasters transmitter site complex is in compliance with the FCC General Population/Uncontrolled MPE.

Statement of Engineer

This Engineering Report regarding radiofrequency field measurements around the KALC 25 kW operation at Lookout Mountain has been prepared by myself. All representations contained herein are true to the best of my knowledge. I am an experienced radio engineer whose qualifications are a matter of record with the Federal Communications Commission. I am a staff engineer in the firm of Hatfield and Dawson Consulting Engineers and am Registered as a Professional Engineer in the State of Washington.

October 8, 2009



Erik C. Swanson, P.E.

Statement of Colorado-Registered Engineer

I have reviewed this Engineering Report and its analysis and conclusions regarding radiofrequency field measurements around the KALC 25 kW operation. All representations contained herein are true to the best of my knowledge. I am an experienced radio engineer whose qualifications are a matter of record with the Federal Communications Commission. I am a senior engineer and partner in the firm of Hatfield and Dawson Consulting Engineers and am Registered as a Professional Engineer in the States of Washington and Colorado.

October 8, 2009



Thomas M. Eckels, P.E.