

JAMES B. HATFIELD, PE  
BENJAMIN F. DAWSON III, PE  
THOMAS M. ECKELS, PE  
STEPHEN S. LOCKWOOD, PE  
DAVID J. PINION, PE

PAUL W. LEONARD, PE  
ERIK C. SWANSON, EIT  
THOMAS S. GORTON, PE

HATFIELD & DAWSON  
CONSULTING ELECTRICAL ENGINEERS  
9500 GREENWOOD AVE. N.  
SEATTLE, WASHINGTON 98103

TELEPHONE  
(206) 783-9151  
FACSIMILE  
(206) 789-9834  
E-MAIL  
hatdaw@hatdaw.com  
MAURY L. HATFIELD, PE  
CONSULTANT  
BOX 1326  
ALICE SPRINGS, NT 5950  
AUSTRALIA

## ELECTROMAGNETIC FIELD MEASUREMENTS

### ENTERCOM COUGAR MTN SITE

17 August 2002

The KMTT Auxiliary antenna is a Shively panel antenna  
consisting of 2 panels at 6 levels.  
This antenna is currently used by seven other FM stations.

KMCQ will operate with an ERP of **7.1 kW** and the antenna spacing at  
104.5 MHz is **1.065 Lambda**

The last know addition of a high power facility was  
the Aux operation of KING-FM. At that time (8/2002)  
on site RFR measurements were taken and they  
indicated the maximum exposure outside the fence with all transmitters  
operating was **45%** of the uncontrolled standard.  
The operation by KMCQ **will not significantly alter** this value.

## FIGURE 4-A - RF EXPOSURE MEASUREMENTS

August 2002 - KMTT Auxiliary Site



KMCQ Ch. 283C2 Covington, WA  
September 2009

## INTRODUCTION

Measurements were made 17 August 2002 between the hours of 10:30 and 11:00 AM, of the human exposure fields from the operation of: KPLU, 88.5 MHz; KNHC, 89.5 MHz; KMPS, 94.1 MHz; KING 98.1 MHz;KBSG, 97.3MHz; KISW, 99.9 MHz; KQBZ, 100.7. MHz; KZOK 102.5 MHz; KMTT, 103.7 MHz, KNDD, 107.7 MHz. All of these auxillary and main facilities were operating at licensed power from the master antenna at the Entercom Cougar Mountain. Site.

## INSTRUMENTATION

A NARDA Model 8718 Electromagnetic Radiation Survey Meter with a NARDA Model 8742 Isotropic Shaped Electric Field Probe was used to make the measurements. The meter and probe were calibrated May 2002 by the manufacturer. The NARDA 8742 probe provides an output proportional to IEEE C95.1-1991/ANSI C95.1-1992 (Controlled Environment) maximum permissible exposure (MPE) over a frequency range from 300 kHz to 2.7 GHz. The isotropic response of the NARDA 8742 probe is +/-0.75dB. The probe calibration factor at 100 MHz (1.06) was applied to all readings for greater accuracy since the highest fields were from FM broadcast antennas.

## METHODS

Measurement procedures outlined in **OET BULLETIN 65, (EDITION 97-01), "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 Entercom Cougar Mtn Auxiliary Antenna Site. The site was scanned with the measurement probe over an area equivalent to that of the human body (one meter by two meters) and the peak hold function on the meter was used to find the highest fields. Spatially averaged measurements were made at the points where the highest fields were found.

## MEASURED FIELDS

The entire area inside the transmitter fence was scanned with the 8742 probe and the maximum measured field indicated by the meter was 8.0% of the FCC Controlled Environment MPE.

The highest measured field found outside the fence was at a location 40 feet NW from the compound gate where the spatially averaged field was **44.0%** of the FCC Uncontrolled Environment MPE. A spatially averaged field of 32.5% of the same MPE was found 10 feet down a trail leading NW off of the site while the measured spatially averaged field was 16.5% of the FCC Uncontrolled Environment MPE near the beginning of the trail 7 feet S.E. of a concrete block terminating the area service road. Peak hold readings along the main road to the Entercom gate were 28.5% of the FCC Uncontrolled Environment MPE within 20 feet of the gate and 34.0% of the same MPE at distances greater than 20 from the gate.

The conclusions of this report are based upon the Commission's environmental requirements in 47 CFR §1.1307 as outlined in ***OET Bulletin 65 (Edition 97-01)***. The transmitting facilities at the Entercom Cougar Mountain Auxiliary Antenna site will not have a significant environmental impact as defined by §1.1307, which includes consideration of the exposure of workers or the general public to levels of Radio Frequency radiation exceeding guidelines issued by the American National Standards Institute, the Federal Communications Commission, and the National Council on Radiation Protection and Measurements.

Stephen S. Lockwood, P.E.

17 August 2002

