

TELECOMMUNICATIONS ENGINEERING

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FCC Form 340

Exhibit 22

RADIOFREQUENCY ELECTROMAGNETIC FIELDS

This office performed an analysis of the ground level ambient radiofrequency electromagnetic field at the Buckhorn Mountain, Colorado, transmitter site to ascertain whether the facilities proposed by KUNC comply with the standards set out in 47CFR§1.1310 and FCC Office of Engineering and Technology Bulletin 65 (Edition 97-1), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, as regards human exposure to radiofrequency electromagnetic fields.

The proposed antenna is to be mounted on a new tower located at the apex of Buckhorn Mountain. There is a second antenna support structure immediately adjacent to the proposed tower. Buckhorn Mountain is the highest of a group of peaks and there are no significant rises in terrain within several hundred meters. Both towers are enclosed within a fenced compound whose access is restricted by a locked gate. Those areas within the compound can be considered not accessible to the general public.

The applicant proposes to operate at 36 kilowatts ERP, using a Shively 6810-6/SS antenna mounted at the 41-meter level of the tower. This antenna consists of six radiating elements spaced one-half wavelength apart.

This same tower is to support the modified facilities of KJAC proposed in BPH-20051227AGK. The adjacent tower supports the licensed facilities of KJAC, KXWA and KLHV as well as the auxiliary facilities of KJAC, permitted in BXPB-20040421AAU and the modified facilities of KXWA permitted in BPED-20050816ABA. There are no other significant emitters of radiofrequency energy in the immediate vicinity.

The applicant has chosen to do a worst case assessment which assumes that the peak electromagnetic field from each of the stations coincide on the ground. Because of the variety of antennas employed by the different radio stations and the variation in their heights above ground, these peak fields do not coincide. Therefore, the aggregate field is considerably less in reality than this assessment predicts.

The electromagnetic power density for the proposed KUNC and KJAC facilities were predicted using the Commission's FMModel program, and the locations and levels of the points of maximum power density noted. Copies of these predictions are attached. KJAC proposes to use an eight-element ERI SPX antenna with one-half wavelength spacing between the elements, mounted at the 51-meter level of the tower. The location and level of the maximum power density for the other facilities on the site were taken from their respective FCC form 340 or 301. Attached is a spreadsheet showing this data.

The facility for each station showing the highest ground level radiofrequency field was selected and the power densities summed. These are the proposed KUNC facility, the proposed KJAC auxiliary facility, the licensed KLHV facility and the proposed KXWA facility. The sum of the power densities from these facilities equals $151.7 \mu\text{W}/\text{cm}^2$, which represents 75.9% of the Commission's general public/uncontrolled maximum permissible exposure standard.

The bulk of the electromagnetic field is attributable to the KJAC auxiliary facility. If we sum the electromagnetic fields of the KUNC, KJAC and KXWA proposed facilities and the KLHV licensed facility, the aggregate power density is equal to $55.05 \mu\text{W}/\text{cm}^2$ corresponding to 27.5% of the general public/uncontrolled standard.

In practice, the applicant anticipates that the ground level ambient radiofrequency electromagnetic power density to be much lower.

The applicant recognizes its responsibility to protect workers whose jobs may take them into areas of elevated radiofrequency electromagnetic fields. To that end, signs will be installed on the towers which warn workers that electromagnetic fields in excess of the occupational/controlled standard may occur at places on the tower and inform them of the procedures necessary to control their exposure. The applicant will, in cooperation with other licensees, reduce power, as necessary, to protect the safety and health of workers.

For these reasons the applicant believes that the proposed facility is in complete compliance with the requirements of 43CFR§1.1307 and neither the preparation of an environmental assessment or environmental processing is warranted.

I, Gray Frierson Haertig, do hereby affirm that:

I have been retained by Community Radio of Northern Colorado to do this analysis and prepare this report;

I am Principal Engineer of Gray Frierson Haertig & Assoc., a firm specializing in Radio Broadcast Engineering;

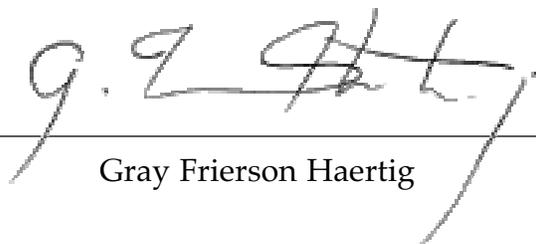
I have a special interest and expertise in the analysis and assessment of Radiofrequency Electromagnetic Fields;

All statements made herein and not attributed to others are true to the best of my knowledge and represent the actual facts of the matter;

I am a broadcast engineer of 40 years experience;

And my qualifications are a matter of record with the Federal Communications Commission.

Respectfully submitted this 18th day of April, 2006.



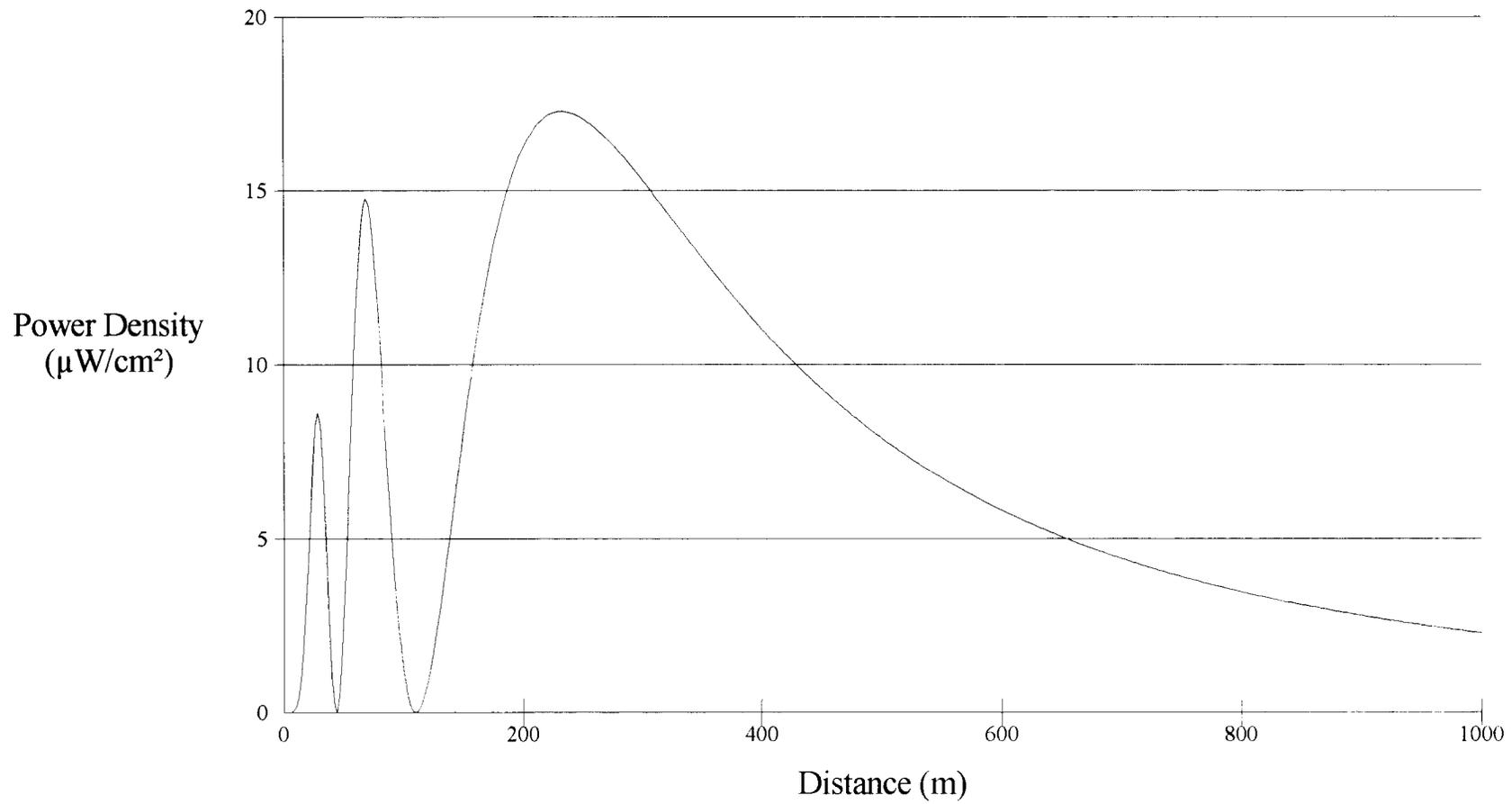
Gray Frierson Haertig

Radiofrequency Electromagnetic Power Density
Buckhorn Mountain, Colorado

Facility	Max. Power Density	Distance from Tower
	$\mu\text{W}/\text{cm}^2$	Meters
KUNC Proposed	18.0	232.0
KJAC Licensed	24.3	256.0
KJAC Proposed, BPH-20051227AGK	7.9	416.0
KJAC Permitted Aux. BXPB-20040421AAU	104.6	256.0
KXWA Licensed	22.5	125.0
KXWA Permitted, BPED-20050816ABA	23.0	200.0
KLHV Licensed	6.1	6.0

KUNC Proposed Facilities

Power Density vs Distance



KJAC Proposed Facilities
BPH-20051227AGK

Power Density vs Distance

