

TELECOMMUNICATIONS ENGINEERING
GRAY FRIERSON HAERTIG & ASSOC.
4646 S.W. COUNCIL CREST DRIVE
PORTLAND, OREGON 97239
503-282-2989 (Office)
503-807-2989 (Cell)

ELECTRONIC MAIL
gfh@haertig.com

1 December 2021
Prepared for the University of Montana
New NCE, Philipsburg, Montana

RADIOFREQUENCY FIELDS

An engineering analysis was performed to determine whether the facilities proposed herein comply with the Maximum Permissible Exposure standards outlined in 47CFR1.1310 as regards human exposure to radiofrequency electromagnetic fields and whether environmental processing would be required.

The applicant proposes to operate at 0.19 kilowatts, circularly polarized, using a Bext TFC2K-2 antenna mounted at the 20-meter level of an existing 35-meter tower. This antenna consists of two radiating elements spaced 0.85 wavelengths apart.

The antenna support structure is located near the apex of Mt. Rumsey. There are no other significant emitters of radiofrequency energy in the immediate vicinity. The base of the tower is located in a locked and fenced enclosure though areas outside of the fence are accessible to the general public.

The Commission's FMModel computer software was used to calculate the radiofrequency electromagnetic power density in a plane 2 meters AGL as a function of the distance from the antenna support structure. The "Opposed V-Dipole" elevation pattern data was selected. A copy of the graphical output of this program is attached.

The highest power density occurs at a point 3 meters from the base of the tower and is equal to $4.1 \mu\text{W}/\text{cm}^2$. This represents 2.1% of the general public/uncontrolled MPE standard.

Because this is less than 5% of the appropriate MPE standard, the applicant's contribution to the ambient radiofrequency electromagnetic power density need not be considered in calculations by others, nor would the applicant be required to participate

in any remediative actions that might be necessary were it determined that the MPE standard was exceeded in areas due to the operation of others.

Appropriate signs will be installed at the base of the tower warning workers and others that the maximum permissible exposure standard may be exceeded at locations on the tower.

The applicant believes that the facilities proposed herein conform to the MPE standards outlined in 47CFR1.1310 and that environmental processing is not warranted.

