

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

16 February 2022
Prepared for the University of Utah
New NCE, Duchesne, Utah

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 0.85 kilowatts, circularly polarized, using a Bext TFC2K-3 antenna mounted at the 24-meter level of an existing 63-meter tower. This antenna consists of three radiating elements spaced 0.666 wavelengths apart.

The antenna support structure is located on Blacktail Ridge. There are no other significant emitters of radiofrequency energy in the immediate vicinity. The base of the tower is enclosed in a locked and fenced compound, but the areas outside of the compound 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 Bext TFC2K is an Opposed V Dipole type antenna element, which elevation pattern data was selected. A copy of the graphical output of this program is attached.

The highest power density occurs at a point 20 meters from the base of the tower and is equal to $3.5 \mu\text{W}/\text{cm}^2$. This represents 1.8% 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.

