

NONIONIZING RADIATION COMPLIANCE

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Marquee Broadcasting, Inc.

Sheridan, WY

The proposed Channel 7 Sheridan, Wyoming facilities will fully comply with the current FCC Standard with regard to human exposure to nonionizing radiation. The proposed antenna is an elliptically polarized ERI ALV8V7ESO7 nondirectional antenna which will operate with an average horizontally polarized effective radiated power of 160 kilowatts and a maximum average vertically polarized effective radiated power of 48 kilowatts. This antenna will be mounted with its center of radiation located 30.5 meters above ground on an existing 76.2 meter tower (ASRN 1007607) located near Buffalo, Wyoming. Equation (2), found on Page 30 of Supplement A to OET Bulletin 65, details the calculation technique used to determine the power density at the base of a TV broadcast tower. In this case, however, it is necessary to substitute the total proposed average DTV effective radiated power (208 kilowatts) for the expression $[0.4ERP_v + ERP_A]$ in this equation to compensate for the fact that DTV power levels are expressed in terms of average power, rather than peak power, as is the case for the visual portion of an analog TV signal. Assuming a downward relative field of 0.1, which is typical for high band VHF antennas, and a total effective radiated power of 208 kilowatts and substituting these values into this equation yields a predicted maximum power density at two meters above ground level of $85.5 \mu\text{W}/\text{cm}^2$. Since the maximum permitted power density for uncontrolled exposure on TV Channel 7 is $200 \mu\text{W}/\text{cm}^2$, this amounts to 42.8% of the permitted level for uncontrolled exposure.

There are four other non-excluded RF sources located on this tower:

K278CJ (103.5 MHz)
KLGT-FM1 (96.5 MHz)
K220DK (91.9 MHz)
KBUW (90.5 MHz)

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The predicted power densities at two meters above ground level for KLGT-FM1 (0.78%) and K220DK (3.1%) are less than 5% of the permitted level for uncontrolled exposure and, as a result, both of these stations can be excluded from this analysis. Based on the FCC's FM Model program, the predicted power density at two meters above ground for K278CJ is $31.0 \mu\text{W}/\text{cm}^2$ (15.5% of the permitted level) and that for KBUW is $12.0 \mu\text{W}/\text{cm}^2$ (6.0% of the permitted level). Combining these values with the predicted Channel 7 power density results in a total predicted power density of 64.3% of the permitted level for uncontrolled exposure. Based on this information, the proposed facilities will comply with the FCC's nonionizing radiation exposure standard.

The applicant will also take appropriate steps to insure that workers who must climb this tower will not be exposed to power densities exceeding the permitted levels for controlled exposure. This will include a reduction in power or the cessation of operation, as appropriate, at any time that workers must be on this tower in any area where the total power density exceeds the permitted level for controlled exposure.

Because the modifications proposed in the attached application will fully comply with the FCC standard regarding human exposure to nonionizing radiation and don't involve any tower modifications which would qualify as a major environmental action, it isn't necessary to undertake any further environmental studies or submit an environmental assessment for these proposed modifications.