

Environmental Statement

Site Environmental Issues

The proposed site for this digital television facility is the existing site of KAJN-LP, a 150 kW non-directional Channel 40 Class A analog TV facility. The tower, ASR Number 1020854 has been in existence and is properly lighted according to all FAA and FCC rules and regulations. No change is being made to the physical facility other than to reduce power to 15 kW ERP and change from analog to digital television modulation. This proposal has no environmental impact other than to improve RF emission levels.

OET Bulletin 65 Compliance

A formula for the power density of a DTV station is:

$$S = \frac{(33.4)F^2(ERP)}{R^2}$$

where:

S = highest power density in microwatts/sq.cm predicted at ground level

F = typical relative field factor in the downward direction (-60 to -90 elevation)

R = distance from ground to center of radiation in meters

ERP = Effective Radiated Power in watts

Based on an antenna form factor of 1, a worst case scenario, an ERP of 15.0 kW and a minimum distance to ground of 154.9 Meters, the power density at ground level is

20.88 $\mu\text{W}/\text{cm}^2$. Based on the lower frequency of Channel 40, 626 MHz, the OET Bulletin 65 limits for uncontrolled exposure at that frequency is 417.3 $\mu\text{W}/\text{cm}^2$. Therefore, this proposed facility produces 5.0% of the limit allowed. KMDL, a channel 247 C2 FM facility is also located at the site. Based on the same worse case formula, KMDL produces a power density of 87.83 $\mu\text{W}/\text{cm}^2$. This is 43.9% of the 200 $\mu\text{W}/\text{cm}^2$ allowed by the Commission. The combination of these two facilities produces 48.9% of the total power density allowed by the Commission for uncontrolled public exposure. There are no other significant sources of RF radiation at the site. The KAJN digital facility meets all requirements for both controlled and uncontrolled exposure. In addition, the applicant also certifies that, in coordination with other users of the site, it will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.