

TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
TV STATION KTFD-DT
BOULDER, COLORADO
CHANNEL 32 395 KW (MAX-DA) 363 m

1. The instant application is the initial 90 day application for the reassigned facilities of KTFD-DT, Boulder, Colorado (Ch. 32). It is proposed to replace the existing side-mount antenna with a new side-mount antenna. There will be no change in the antenna radiation center height (2397 m AMSL). There will also be no change in the overall structure height of the existing tower (ASRN 1023484).

2. The proposed maximum directional effective radiated power was adjusted to 395 kW to account for differences in the current and proposed directional antenna patterns. Although there is some slight extension of the predicted service area relative to the baseline reassignment facility listed in the FCC's *Closing and Reassignment Public Notice*, the extension will not exceed 1% in any direction. The proposed facility is also compliant with the 95% population service requirement. See attached FCC *TVStudy* analysis exhibit. Also, the proposal complies with the city coverage requirements as demonstrated in the Predicted Coverage Contours exhibit.

3. As also demonstrated in the *TVStudy* analysis exhibit, the proposal complies with the FCC's interference protection requirements based on a cell size of 2.0 km and profile resolution of 1.0 points/km.

4. Regarding the Table Mountain receiving zone, the proposed facility will radiate less energy in that direction than the given allotment for KTFD-DT. Specifically, the KTFD-DT channel 32 baseline assignment facility results in a field strength at Table Mountain of 99.6 dBu, while the proposed KTFD-DT facility will result in a field strength of 94.9 dBu. See *TVStudy* Analysis exhibit.

5. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna will be located 54 meters above ground level. The total DTV ERP is 481.9 kW (395 kW-horizontal, 86.9 kW-vertical). A conservative vertical plane relative field value of 0.113 is presumed for the antenna's downward radiation in both the horizontal and vertical planes of polarization (for angles

below 60 degrees downward, see attached antenna data). The calculated power density at a point 2 meters above ground level is 76.0 uW/cm^2 which is 19.6% of the FCC's recommended limit of 387.3 uW/cm^2 for channel 32 for an uncontrolled environment. It is noted that this is a reduction in the calculated power density as compared to the current KTFD-DT operation (BLCDT-20110812AAS) which has a calculated power density at a point 2 meters above ground level of 134 uW/cm^2 or 41.8% of the FCC's recommended limit (see Attachment 46/Environmental Considerations to BPCDT-20080619ADV).

The tower base is fenced and marked with RFR warning signs. Additional RFR signs mark areas of this remote, uninhabited mountaintop site where excessive exposure may occur, based upon field RFR survey. Furthermore, the site is periodically surveyed for RFR changes. In addition, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure.