



RADIO FREQUENCY IMPACT, SAFETY & COMPLIANCE SHOWING

The applicant is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KVCW DTS system antennas and will reduce power or cease operation, when necessary, to ensure protection to those personnel.

As shown in Appendix A the KVCW channel 29 facility at the KTNV-TV studio site, as proposed herein, will operate with a maximum ERP of 11.22 kW from an elliptically polarized directional transmitting antenna with a centerline height of 79.25 meters above ground level (AGL). Considering the elevation pattern provided elsewhere in this submission, the vertical plane relative field factor is less than 0.302 at all depression angles greater than 28 degrees. The proposed KVCW channel 29 DTS-2 facility is predicted to produce a worst-case power density at two meters above ground level, at 77.3 meters from the tower base, of $5.502 \mu\text{W}/\text{cm}^2$, which is 1.47% of the FCC guideline value of $375.33 \mu\text{W}/\text{cm}^2$ for an "uncontrolled" environment, and 0.294% of the FCC's guideline value for "controlled" environments. Therefore, pursuant to Section 1.1307(b)(3) of the FCC Rules, because the proposed new DTS-2 facility would not exceed 5% of the uncontrolled and controlled exposure limits, the proposal's power density contribution is considered insignificant. Further, the Applicant will continue to cooperate/coordinate with other site users and reduce power and/or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel. In light of the above, the proposed facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

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The licensed KVCW facility, which will be designated as DTS-1, is currently licensed to broadcast ATSC 3.0 and the instant DTS application for construction permit seeks no changes in that facility, which has previously been evaluated in regard to the FCC guidelines on human exposure to non-ionizing radiation. The calculated levels of RF exposure in the area below the tower is less than 3% of the allowable limit for a controlled environment and less than 15% of the allowable limit for an uncontrolled environment. The Black Mountain antenna farm is a controlled access site. Access to the transmitting tower site and any RF transmitting equipment is restricted and clearly marked with warning signs. When workers or other authorized personnel enter the restricted area appropriate measures are taken to assure worker safety.

Maximum ERP 11.22 kW

Polarization ----- 2 Circular
 Antenna Height Above Ground -- 79.25 meters 260.0 feet
 FCC Uncontrolled RFR Limit ---- 375.33 $\mu\text{W}/\text{cm}^2$

Maximum Computed Power Density **5.502** $\mu\text{W}/\text{cm}^2$
 1.47% of limit

Angle Below Horizontal (degrees)	<Point X> Horiz Distance from tower to 2 m AGL (meters)	Slant Distance from antenna to Point X (meters)	Vertical Pattern (REL. FIELD)	KVCW ERP (kW)	KVCW Calculated Power Density $\mu\text{W}/\text{cm}^2$	Percent Limit	Limit Exceeded?
0			0.843	7.9735			
5	883.0	886.3	0.999	11.1976	0.952	0.25%	No
10	438.1	444.9	0.846	8.0303	2.711	0.72%	No
15	288.3	298.5	0.505	2.8614	2.146	0.57%	No
20	212.2	225.9	0.351	1.3823	1.810	0.48%	No
25	165.7	182.8	0.344	1.3277	2.655	0.71%	No
30	133.8	154.5	0.233	0.6091	1.705	0.45%	No
35	110.3	134.7	0.185	0.3840	1.414	0.38%	No
40	92.1	120.2	0.277	0.8609	3.982	1.06%	No
45	77.3	109.2	0.296	0.9831	5.502	1.47%	No
50	64.8	100.8	0.226	0.5731	3.764	1.00%	No
55	54.1	94.3	0.123	0.1697	1.275	0.34%	No
60	44.6	89.2	0.046	0.0237	0.199	0.05%	No
65	36.0	85.2	0.044	0.0217	0.200	0.05%	No
70	28.1	82.2	0.051	0.0292	0.288	0.08%	No
75	20.7	80.0	0.039	0.0171	0.178	0.05%	No
80	13.6	78.4	0.020	0.0045	0.049	0.01%	No
85	6.8	77.5	0.005	0.0003	0.003	0.00%	No
90	0.0	77.3	0.000	0.0000	0.000	0.00%	No

