

**ENVIRONMENTAL STUDY**

**KUTV ASSOCIATES  
STATION KUSG-DT ST. GEORGE, UTAH  
CH 9 3.2 KW (MAX-DA) 43 METERS**

KUTV Associates proposes to operate the digital television (DTV) facilities of KUSG-DT, channel 9 (186 to 192 megahertz (MHz)), St. George, Utah, at an existing transmitter site located at geographic coordinates 37° 03' 48" North Latitude, 113° 34' 23" West Longitude (referenced to 1927 North American Datum), using a horizontally polarized directional antenna, 3.2 kilowatts (kW) maximum average effective radiated power (ERP), and 43 meters antenna radiation center height above average terrain. The proposed KUSG-DT antenna radiation center is 7 meters above ground level (AGL).

An analysis has been made of the human exposure to RFR using the calculation methodology described in *OET Bulletin 65, Edition 97-01*, prepared by the FCC Office of Engineering and Technology. This analysis was made at a reference point defining the location of a future fence, two meters above ground level and 30.5 meters (100 feet) from the proposed KUSG-DT supporting structure. At this reference point, a vertical plane relative field factor of 1.0, obtained from the

manufacturer's theoretical vertical plane radiation pattern for the KUSG-DT Dielectric Communications, type THA-C2-4/8-1, transmitting antenna, was used in the calculation of the KUSG-DT power density. The proposed KUSG-DT maximum average ERP of 3.2 kW was used in the calculation of power density. To account for ground reflections, a coefficient of 1.6 was included in the calculations. The power density calculations reported herein were made at 186 MHz, the lower edge of KUSG-DT channel 9.

The FCC maximum permissible exposure (MPE) limit for general population/uncontrolled exposure is 0.2 milliwatt-per-square-centimeter (mW/cm<sup>2</sup>) at 186 MHz. The FCC MPE limit for occupational/controlled exposure is 1.0 mW/cm<sup>2</sup> at 186 MHz. At the reference point two meters AGL and 30.5 from the base of the KUSG-DT antenna supporting structure, the calculated KUSG-DT power density is 0.112 mW/cm<sup>2</sup>, which is 56.0 percent of the FCC MPE limit for general population/uncontrolled exposure, and 11.2 percent of the FCC MPE limit for occupational/controlled exposure.

Pursuant to the provisions of *OET Bulletin 65, Edition 97-01*, at multiple-user transmitter sites, only those licensees whose transmitters produce power density levels in excess of 5.0 percent of the applicable exposure limit are

considered “significant contributors” and share responsibility for actions necessary to bring the local RFR environment into compliance with FCC exposure limits. Since the calculated power density indicates that the KUSG-DT operation may contribute more than 5.0 percent of the maximum permissible exposure limit for general population/uncontrolled exposure at the reference point, KUSG-DT may be a “significant contributor” to the local RF exposure environment and contributions to exposure from other sources in the vicinity of KUSG-DT must be taken into account when determining total exposure at the proposed multiple use site.

Experience has shown that in many cases the actual exposure present at ground level is much less than that predicted using the conservative assumptions incorporated into the *Bulletin 65* methodology that includes use of a 60 percent reflection factor. The difficulty predicting exposures at multiple use sites is exacerbated by many additional factors that cannot be easily modeled including, but not limited to, tower reflections, obstructions, and the actual antenna vertical plane radiation patterns for all transmitting antennas in use at the site. Accordingly, once construction is complete, KTVU Associates will conduct measurements at the site to demonstrate that the addition of KUSG-DT does not result in exposures exceeding the FCC MPE for general population/uncontrolled exposure at any publicly accessible location at or near the site. KTVU Associates will submit

measurement data to the FCC demonstrating compliance with Section 1.1310 of the FCC Rules in support of the KUSG-DT request for program test authority and license application.

The KUSG-DT operation will be a “significant contributor” to exposure at locations on the supporting structure near the KUSG-DT transmitting antenna. If work is done on the tower in an area where overexposure could occur, KTVU Associates will take all actions necessary to prevent the overexposure of workers on the tower, including reducing KUSG-DT transmitter power or ceasing KUSG-DT operation completely. Additionally, KTVU Associates will cooperate with all other site users to assure that work is performed at the site without exceeding the FCC MPE limit for occupational/controlled exposure.

The instant proposal is categorically excluded from environmental processing since none of the conditions of Sections 1.1306(b)(1), (2), or (3) of the FCC Rules would be involved for the following reasons:

1. The existing KUSG-DT channel 9 DTV supporting structure is located in a multiple use communications site.

2. The provision of Section 1.1306(b)(2) of the FCC Rules relating to the use of high-intensity strobe lighting does not apply since the existing KUSG-DT supporting structure does not require obstruction lighting.

3. Finally, with regard to RFR exposure concerns, compliance with applicable FCC MPE limits will be demonstrated by measurement and maintained through cooperation with other users at the site.