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**FCC FORM 301**  
**ENGINEERING EXHIBIT**  
**APPLICATION FOR CONSTRUCTION PERMIT**  
**PREPARED FOR**  
**KTVU PARTNERSHIP**  
**STATION KTVU-DT**  
**OAKLAND, CALIFORNIA**  
**CH 56      1,000 KW (MAX-DA, BT)      433 METERS**

This engineering exhibit was prepared on behalf of KTVU Partnership (hereinafter KTVU), licensee of station KTVU-DT, Oakland, California, in support of an FCC Form 301 application for construction permit

KTVU-DT is licensed (FCC File Number BLCDDT-19990329KE) for digital television (DTV) operation on channel 56 (722 to 728 megahertz (MHz)) with 501 kilowatts (kW) maximum average effective radiated power (ERP), horizontally polarized, 432 meters antenna radiation center height above average terrain (HAAT), from a site located at geographic coordinates 37° 45' 19" North Latitude, 122° 27' 06" West Longitude, referenced to the 1927 North American Datum. The KTVU-DT antenna radiation center is 205 meters above ground level (AGL).

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The instant application proposes to increase the KTVU-DT maximum average ERP from 501 kW to 1,000 kW using the licensed KTVU-DT antenna and to increase the KTVU-DT antenna radiation center HAAT from 432 meters to 433 meters to conform the authorized antenna radiation center HAAT with that computed using the FCC's *tv\_process* computer program. No other changes to the licensed KTVU-DT facilities are requested.

The reference facilities<sup>1</sup> for DTV operation on channel 56 at Oakland, California, are 1,000 kW average ERP and 479 meters HAAT. Although, as explained below, the application is "checklist-like" in that it proposes a DTV service area contained within the replication service area of the underlying DTV allotment, the relative field factors of the licensed KTVU-DT antenna are less than or equal to the relative field factors of the channel 56 allotment at Oakland, California, replication pattern in all directions with the exception of the 90 degree True azimuth, where it exceeds the allotment replication pattern's field factor by 0.006. Since the proposed ERP is 1,000 kW and the allotment ERP is 988 kW on

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<sup>1</sup> Appendix B, *DTV Table of Allotments, Second Memorandum Opinion and Order on Reconsideration of the Fifth and Sixth Report and Orders*, MM Docket 87-268, 14 FCC Rcd 1348 (1998).

the 90 degree True azimuth, question 3 of Section III-D of the instant application is answered “No” and the instant application is not a “checklist” application.

The instant application does not raise any issue with respect to the June 18, 2002, freeze on the filing of “maximization” applications by TV and DTV stations requesting operation on TV channel 52-59.<sup>2</sup> The FCC defined a maximization application in this Public Notice as a modification application that would increase a station’s analog or DTV service area in channels 52-59 in one or more directions beyond the combined area resulting from the station’s parameters in the DTV Table of Allotments, Commission authorizations, and applications on file with the FCC prior to the Public Notice. Figure 1 of this engineering exhibit is a map of Northern California upon which the calculated 41 dB $\mu$  F(50,90) coverage contours of the channel 56, Oakland, California, allotment reference facility and the proposed KTVU-DT facility are plotted and demonstrates that the proposed KTVU-DT calculated 41 dB $\mu$  F(50,90) contour is within the channel 56, Oakland, California, allotment reference facility’s calculated 41 dB $\mu$  F(50,90)

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<sup>2</sup> *Freeze on the Filing of TV and DTV “Maximization” Applications in Channels 52-59*, Media Bureau, 17 FCC Rcd 11290 (June 18, 2002).

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coverage contours for all azimuths. Thus, the instant proposal is not a “maximization” application as defined in the June 18, 2002 Public Notice.

Public access to the existing KTVU-DT antenna and supporting structure is restricted by a two-meter chain link fence, topped with barbed wire, which encircles the KTVU-DT supporting structure.

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. A conservative vertical plane relative field factor of 0.1, obtained from the manufacturer’s theoretical vertical plane radiation pattern for the existing KTVU-DT Dielectric Communications, type TUP-C3-8-1, transmitting antenna, was used in the calculation of the KTVU-DT power density. The KTVU-DT maximum average ERP of 1,000 kW was used in the calculation of the KTVU-DT power density. To account for ground reflections, a coefficient of 1.6 was included in the calculation. The KTVU-DT power density calculations reported herein were made at 722 MHz, the lower edge of the KTVU-DT channel.

The FCC maximum permissible exposure (MPE) for general population/uncontrolled exposure is 0.48 milliwatt per square centimeter (mW/cm<sup>2</sup>) at 722 MHz. The FCC MPE limit for occupational/controlled exposure is 2.41 mW/cm<sup>2</sup> at 722 MHz. At a reference point two meters AGL at the base of the KTVU-DT supporting structure, the calculated KTVU-DT power density is 0.0081 mW/cm<sup>2</sup>, which is 1.69 percent of the FCC MPE limit for general population/uncontrolled exposure, and 0.34 percent of the FCC MPE limit for occupational/controlled exposure.

Pursuant to the provisions of *OET Bulletin 65, edition 97-01*, at multiple-user 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 KTVU-DT operation will contribute less than 5.0 percent of the most restrictive permissible exposure at any location on the ground at the multiple-user site, KTVU-DT is not considered a “significant contributor” to the local RF exposure environment and contributions to exposure from other sources in the vicinity of KTVU-DT were not taken into account in this analysis.

While not a “significant contributor” to the exposure levels at any location on the ground, the KTVU-DT operation will be a “significant contributor” to exposure at locations on the supporting structure near the KTVU-DT transmitting antenna. If work is done on the tower in an area where overexposure could occur, KTVU will take action necessary to prevent the overexposure of workers on the tower, including reducing KTVU-DT transmitter power or ceasing KTVU-DT operation completely. Additionally, KTVU will cooperate with other site users to assure that work is performed at the site without exceeding the FCC MPEs 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:

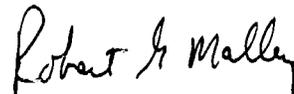
1. The KTVU-DT channel 56 DTV facility utilizes an existing antenna supporting structure located in a multiple use communications site.
2. The provision of Section 1.1306(b)(2) of the FCC Rules relating to the use of high-intensity strobe lighting does not apply because an existing supporting

structure will be used and no change in the existing obstruction lighting is proposed.

3. Finally, with regard to RFR exposure concerns, the instant application complies with applicable FCC MPE limits.

CERTIFICATION

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge. Executed on March 12, 2004.



Robert G. Mallery

