

## **ENGINEERING EXHIBIT**

### **Request for Special Temporary Authorization**

prepared for

**CBS Broadcasting Inc.**  
KPIX-DT San Francisco, CA  
Facility ID 25452  
Ch. 29 500 kW 371 m

*CBS Broadcasting Inc.* (“*CBS*”) is the licensee of television station KPIX-TV, analog Channel 5 and digital Channel 29, San Francisco, CA. This statement supports *CBS*’ request for Special Temporary Authority (“*STA*”) to operate the post-transition digital KPIX-DT facility at reduced power during periods of tower work. This statement supplies coverage and population data as specified in the Report and Order in the Third Periodic Review<sup>1</sup> for a phased implementation of the KPIX-DT post-transition operation.

A Construction Permit (“*CP*”, BPCDT-20080603AAG) authorizes construction of the final post-transition KPIX-DT facility with a top-mount antenna on Channel 29, as established in Appendix B of the Seventh Report and Order in MB Docket 87-278. KPIX-DT is presently licensed on Channel 29 to operate at 1000 kW effective radiated power (“*ERP*”) using a side-mounted directional antenna at a height above average terrain (“*HAAT*”) of 401 meters. The *CP* authorizes KPIX-DT to operate with a top-mount directional antenna at 1000 kW *ERP* and 512 meters *HAAT*.

*CBS*’ plan for KPIX-DT as authorized by the current *CP* involves installation of a new top-mount main antenna for digital Channel 29 in place of the current analog transmitting antennas atop the shared Sutro Tower. The KPIX-DT main antenna will be shared with some of the eleven other

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<sup>1</sup>*Third Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television*, MB Docket No. 07-91, FCC 07-228, released December 31, 2007.

television stations that operate from Sutro Tower. Installation of the various top-mounted digital transmitting antennas for KPIX-DT and the other stations cannot be accomplished until after analog operations cease in February 2009. Until the antenna reconfiguration is completed, KPIX-DT will continue to operate from its licensed, side-mount antenna. As needed to allow for worker safety during the construction, KPIX-DT will operate utilizing the STA facility described herein, to be side-mounted at a lower elevation than the currently licensed antenna. It is expected that the STA operation will be required only when workers are present on the tower structure in proximity to the currently licensed main antenna (*i.e.*, daylight hours on weekdays), and the main antenna will be in operation at other times.

A separate application on FCC Form 301 for an auxiliary antenna construction permit is being filed contemporaneously with the instant STA request. The auxiliary antenna application specifies identical parameters to those herein. The STA request is being made in an abundance of caution in order to demonstrate compliance with the Commission's phased implementation policies described in the Third Periodic Review.

**Figure 1** shows that the 41 dB $\mu$  contour of the proposed STA facility does not extend beyond the 41 dB $\mu$  contour of the licensed main facility (BLCDT-19990301KF) over land area, and is completely encompassed by that of the CP facility (BMPCDT-20080603AAG).

Population counts for the various KPIX-TV/DT facilities are summarized in the following as determined using OET Bulletin 69<sup>2</sup> analysis. The area which is common to both the current analog and digital operations is the target for match by a post-transition reduced power phased implementation. The STA's digital service population is actually slightly increased from the licensed pre-transition counts since incoming interference levels are changed with the elimination of nearby analog stations. The proposed STA facility would provide a greater than 100 percent

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<sup>2</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

population match of the licensed analog and digital KPIX-TV/DT facilities' common service population.

**Population Summary**

KPIX-TV/DT Facility	Interference-Free Population (2000 Census)
Licensed Analog Ch. 5 (BLCT-2266)	6,684,197
Licensed Digital Ch. 29 (BLCDT-19990301KF)	6,169,722
Proposed STA Digital Ch. 29	6,234,704

The proposed STA operation complies with the FCC's limits concerning human exposure to RF energy. Based on OET-65 equation (10), and considering 15 percent antenna relative field in downward elevations (pattern data shows less than 15 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is  $17.6 \mu\text{W}/\text{cm}^2$ , which is 4.7 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent. The applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.



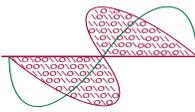
Joseph M. Davis, P.E.  
September 26, 2008

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List of Attachments

Figure 1      STA Coverage Contour Comparison

*This material was entered September 26, 2008 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*



**Chesapeake RF Consultants, LLC**  
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**Figure 1**  
**STA Coverage Contour Comparison**  
**KPIX-DT San Francisco, CA**  
**Facility ID 25452**  
**Ch. 29 500 kW 371 m**

prepared for  
**CBS Broadcasting Inc.**

September, 2008

Proposed KPIX-DT STA and Auxiliary
Ch. 29 500 kW 371 m
DTV City Grade (48 dBμ)
DTV Service (41 dBμ)

KPIX-DT Lic
BLCDT-19990301KF
Ch. 29 1000 kW 401 m
DTV Service 41 dBμ

KPIX-DT CP
BMPCDT-20080603AAG
1000 kW 512 m
DTV Service 41 dBμ

KPIX-TV Lic Ch. 5
BLCT-2266
Grade B Contour 47 dBμ

