

Engineering Statement – Construction Permit

***CBS Broadcasting Inc.***

KCBS-TV(Aux) Los Angeles, California

Facility ID 9628

Ch. 31 316 kW (Max-DA) 951.8 m

*CBS Broadcasting Inc.* (“ViacomCBS”) herein proposes to modify the KCBS-TV Los Angeles, California auxiliary antenna facility known as *Weathervane*.<sup>1</sup> The proposed facility will operate as presently licensed with no change to antenna height, patterns, or beam tilt. The only proposed change is an increase in effective radiated power (ERP) to 316 kW.

The existing KCBS-TV antenna utilizes one-degree of downward mechanical beam tilt oriented to 217 degrees with respect to true North. According to information from the antenna manufacturer, the antenna also has 1.65-degrees of electrical beam tilt on channel 31. Pursuant to FCC Rule §73.625(c)(3)(ii), the provided horizontal plane pattern reflects the effects of beam tilt. Calculated values are provided below.

Coverage map **Figure 1** shows predicted coverage from the proposed facility. With one minor exception, the proposed service contour does not extend beyond that of the main KCBS-TV antenna<sup>2</sup> as required by FCC Rule §73.1675.<sup>3</sup> The exception is near the 220-degree radial where the proposed contour extension encompasses no land area. It is understood that Media Bureau policy generally allows such overlaps. However, if a waiver of §73.1675 is required in this case, one is hereby requested.

Because there are no AM transmitter sites within 3 kilometers of the proposed facility, FCC Rule §1.30002 will not be triggered. The nearest FCC monitoring station is 511 kilometers from the proposed facility at Livermore, California, well beyond the protection radius specified in §73.1690(c). Thus, it is believed that the proposed facility satisfies all allocation matters.

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<sup>1</sup> KCBS-TV has two auxiliary sites. In addition to *Weathervane* (LMS file number 0000125271), KCBS-TV operates a site at *Verdugo Peak* (LMS file 0000124430). Both should remain current in LMS.

<sup>2</sup> ViacomCBS is licensed (LMS file 0000071647) for a KCBS-TV facility on Channel 31.

<sup>3</sup> §73.1675 specifies an analysis of Grade B contours. Because “Grade B” is not defined in a digital television context, Figure 1 provides dipole-corrected 41 dBμ contours instead.

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The proposed facility uses an existing tower<sup>4</sup> along with the formerly-licensed KCBS-TV main antenna system. No change is proposed to the tower height, marking specifications, or lighting specifications. Since no outdoor construction is proposed, this application is categorically excluded from environmental processing. At 316 kW, the proposed facility will operate only intermittently and with only 60 percent of the recently licensed 540 kW ERP.<sup>5</sup> As a consequence, radiofrequency (“RF”) fields from the proposed facility are anticipated to be less than prior values.

*CBS* participates in a site RF exposure program with other Mount Wilson broadcasters. Following construction of the proposed facility, *CBS* will conduct measurements or calculations to evaluate the level of RF exposure resulting from this as well as other emitters. Appropriate RF exposure abatement procedures will be established and followed to comply with the FCC’s exposure limits to both the general public and workers. Possible measures include restriction of access, power reduction, modification of facilities, or the complete shutdown of facilities when work must be performed in any locations where predicted RF levels may otherwise exceed the appropriate guidelines. Tower access will continue to be controlled and appropriate RF exposure warning signs will continue to be posted.

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<sup>4</sup> See Antenna Structure Registration 1007719.

<sup>5</sup> See BLCDT-20090612AIQ.

KCBS-TV(Aux) Los Angeles, California

Beam Tilt Relative Field Values

<b>Azimuth (degrees)</b>	<b>Mechanical Tilt (degrees)</b>	<b>Effective Tilt (degrees)</b>	<b>Tilted Vertical Plane Relative Field</b>	<b>Untilted Horizontal Plane Relative Field</b>	<b>Composite Relative Field</b>	<b>Normalized Relative Field</b>
0	-0.799	0.851	0.889	0.855	0.760	0.788
5	-0.848	0.802	0.873	0.907	0.792	0.821
10	-0.891	0.759	0.859	0.938	0.806	0.835
15	-0.927	0.723	0.848	0.905	0.767	0.795
20	-0.956	0.694	0.839	0.840	0.705	0.731
25	-0.978	0.672	0.832	0.828	0.689	0.714
30	-0.993	0.657	0.827	0.916	0.758	0.785
35	-0.999	0.651	0.825	0.996	0.822	0.852
36	-1.000	0.650	0.825	1.000	0.825	0.855
40	-0.999	0.651	0.825	0.964	0.795	0.824
45	-0.990	0.660	0.828	0.854	0.707	0.733
50	-0.974	0.676	0.833	0.797	0.664	0.688
55	-0.951	0.699	0.840	0.855	0.718	0.744
60	-0.921	0.729	0.850	0.941	0.800	0.829
65	-0.883	0.767	0.862	0.963	0.830	0.860
70	-0.839	0.811	0.876	0.903	0.791	0.820
75	-0.788	0.862	0.892	0.846	0.755	0.782
80	-0.731	0.919	0.910	0.819	0.745	0.772
85	-0.669	0.981	0.930	0.825	0.767	0.795
90	-0.602	1.048	0.938	0.855	0.802	0.831
95	-0.530	1.120	0.941	0.907	0.853	0.884
100	-0.454	1.196	0.944	0.938	0.885	0.917
105	-0.375	1.275	0.948	0.905	0.858	0.889
110	-0.292	1.358	0.951	0.840	0.799	0.828
115	-0.208	1.442	0.955	0.828	0.791	0.820
120	-0.122	1.528	0.959	0.916	0.878	0.910
125	-0.035	1.615	0.962	0.996	0.958	0.993
126	-0.017	1.633	0.963	1.000	0.963	0.998
130	0.052	1.702	0.966	0.964	0.931	0.965
135	0.139	1.789	0.970	0.854	0.828	0.858
140	0.225	1.875	0.974	0.797	0.776	0.804
145	0.309	1.959	0.977	0.855	0.835	0.865
150	0.391	2.041	0.969	0.941	0.912	0.945
155	0.469	2.119	0.950	0.963	0.915	0.948
160	0.545	2.195	0.931	0.903	0.841	0.872
165	0.616	2.266	0.914	0.846	0.773	0.801
170	0.682	2.332	0.897	0.819	0.735	0.762
175	0.743	2.393	0.882	0.825	0.728	0.754
180	0.799	2.449	0.869	0.855	0.743	0.770
185	0.848	2.498	0.856	0.907	0.776	0.804
190	0.891	2.541	0.846	0.938	0.794	0.823
195	0.927	2.577	0.837	0.905	0.757	0.784
200	0.956	2.606	0.830	0.840	0.697	0.722
205	0.978	2.628	0.825	0.828	0.683	0.708

KCBS-TV(Aux) Los Angeles, California

Beam Tilt Relative Field Values

<b>Azimuth (degrees)</b>	<b>Mechanical Tilt (degrees)</b>	<b>Effective Tilt (degrees)</b>	<b>Tilted Vertical Plane Relative Field</b>	<b>Untilted Horizontal Plane Relative Field</b>	<b>Composite Relative Field</b>	<b>Normalized Relative Field</b>
210	0.993	2.643	0.821	0.916	0.752	0.779
215	0.999	2.649	0.819	0.996	0.816	0.846
216	1.000	2.650	0.819	1.000	0.819	0.849
217	1.000	2.650	0.819	0.998	0.817	0.847
220	0.999	2.649	0.819	0.964	0.790	0.819
225	0.990	2.640	0.822	0.854	0.702	0.727
230	0.974	2.624	0.825	0.797	0.658	0.682
235	0.951	2.601	0.831	0.855	0.711	0.737
240	0.921	2.571	0.839	0.941	0.789	0.818
245	0.883	2.533	0.848	0.963	0.817	0.847
250	0.839	2.489	0.859	0.903	0.776	0.804
255	0.788	2.438	0.871	0.846	0.737	0.764
260	0.731	2.381	0.885	0.819	0.725	0.751
265	0.669	2.319	0.901	0.825	0.743	0.770
270	0.602	2.252	0.917	0.855	0.784	0.812
275	0.530	2.180	0.935	0.907	0.848	0.879
280	0.454	2.104	0.953	0.938	0.894	0.926
285	0.375	2.025	0.973	0.905	0.881	0.913
290	0.292	1.942	0.977	0.840	0.821	0.851
295	0.208	1.858	0.973	0.828	0.806	0.835
300	0.122	1.772	0.969	0.916	0.888	0.920
305	0.035	1.685	0.965	0.996	0.961	0.996
306	0.017	1.667	0.965	1.000	0.965	1.000
310	-0.052	1.598	0.962	0.964	0.927	0.961
315	-0.139	1.511	0.958	0.854	0.818	0.848
320	-0.225	1.425	0.954	0.797	0.760	0.788
325	-0.309	1.341	0.951	0.855	0.813	0.842
330	-0.391	1.259	0.947	0.941	0.891	0.923
335	-0.469	1.181	0.944	0.963	0.909	0.942
340	-0.545	1.105	0.941	0.903	0.850	0.881
345	-0.616	1.034	0.937	0.846	0.793	0.822
350	-0.682	0.968	0.926	0.819	0.758	0.785
355	-0.743	0.907	0.906	0.825	0.747	0.774

KCBS-TV(Lic) Post-Transition Main  
FCC File 0000071647  
41 dBμ F(50, 90) Service Contour

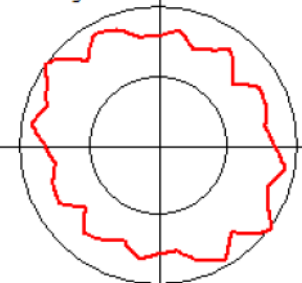
Figure 1  
Proposed Facility Coverage Contours

KCBS-TV(Aux) Los Angeles, California  
Facility ID 9628  
Ch. 31 316 kW (Max-DA) 951.8 m

KCBS-TV Proposed Auxiliary Facility  
41 dBμ F(50, 90) Service Contour

Auxiliary Antenna Pattern

Rotation Angle = 0



Scale 1:1,500,000



**CBS** COMMUNICATIONS  
SERVICES INC.

