

Engineering Statement

CBS Broadcasting Inc.

WCBS-TV(Aux) New York, New York

Facility ID 9610

Ch. 36 (Post Transition Aux) 447 kW 397 m

CBS Broadcasting Inc. (“*CBS*”) proposes an additional, post-transition auxiliary antenna for WCBS-TV New York, NY.¹ The proposed facility will utilize the formerly licensed WCBS-TV main antenna for emergency, maintenance and test purposes following completion of the Phase 4 incentive auction repack. This antenna, a Dielectric model ESBTUF80, is located 397 meters above average terrain (HAAT) and will utilize an effective radiated power (ERP) of 447 kW.² This Statement addresses allocations, environmental, and radiofrequency factors related to this proposal.

The attached coverage map Figure 1 demonstrates that the proposed service contour does not extend beyond either the WCBS-TV licensed, pre-transition antenna as required by FCC Rule §73.1675³ or the authorized, post-transition antenna.⁴ 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 299 kilometers away at Laurel, Maryland, well beyond the protection radius specified in §73.1690(c). Thus, it is believed that the proposed facility satisfies all allocation matters.

The proposed facility uses an existing support structure⁵ and antenna so no construction is required. According to Note 1 of FCC Rule §1.1306, the use of existing facilities is

¹ *CBS* ultimately plans to construct three post-transition auxiliary antennas: 1.) One World Trade Center; 241 kW at 496 m; File Number 0000059127, 2.) Empire State Building; 490 kW at 312 m, and 3.) Empire State Building; 447 kW at 397 m. The existing pre-transition WCBS-TV auxiliary facility at West Orange, NJ (File Number 0000004179) will also be retained.

² The ESBTUF80 is a custom, broadband antenna system designed for non-directional, shared use by multiple UHF television stations at the Empire State Building. The system consists of horizontally-polarized antenna panel elements side-mounted 395 meters above ground level (AGL) on the northwest side of the structure that provide 270-degrees of azimuthal coverage. The remaining 90-degrees of coverage is partially filled by a second panel array side-mounted on the southeast side of the structure at 310 m AGL. Together, the composite system is designed to minimize the undesirable influence of the large support structure and provide non-directional coverage. The panels on the southeast include a 223.5 kW (50%) vertically polarized component.

³ FCC Rule §73.1675 requires a comparison of Grade B contour locations. Because “Grade B” is not defined in a digital television context, Figure 1 provides 41 dBμ dipole-corrected contours instead.

⁴ See FCC LMS File Number 0000033867.

⁵ See Antenna Structure Registration 1007048.

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environmentally preferable to new construction. Since there will be no change in overall height, marking specifications, or lighting specifications, this application is categorically excluded from environmental processing.

Although the antenna is predominantly horizontally polarized at 395 meters, there are also elliptically-polarized antenna elements located 310 meters above ground level. For simplicity, radiofrequency exposure calculations were based on a worst-case scenario consisting of an elliptically-polarized antenna at the lower height along with the manufacturer's worst-case downward (10-90°) relative field pattern of 21 percent.

The proposed operation was evaluated for human exposure to radiofrequency energy using equation ten (10) from the Commission's OET Bulletin No. 65. Calculations show that the proposed facility would contribute a power density of 10.4 $\mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure or 2.6 percent of the FCC's 403.3 $\mu\text{W}/\text{cm}^2$ "uncontrolled/general population" exposure limit for UHF Channel 36 (605 MHz). According to §1.1307(b)(3), facilities at locations with multiple emitters are categorically excluded from responsibility for taking corrective action in areas where their contribution is less than five percent of the limit. RF power density is expected to be even lower at ground level locations away from the base of the support structure due to the increasing distance from the transmitting antenna.

Access to the tower, rooftop, and all building locations that may exceed exposure limits will continue to be strictly controlled by the building owner. CBS will continue to participate in the building owner's RF exposure safety program that, in cooperation with other broadcasters, includes restriction of access, power reduction, or shutdown of facilities when predicted or measured RF exposure would otherwise be exceeded.

