

**ENVIRONMENTAL STUDY**

**NBC SUBSIDIARY (WCAU-TV), L.P.  
STATION WCAU-DT PHILADELPHIA, PENNSYLVANIA  
CH 67 560 KW (H), 112 KW (V) 377 METERS**

NBC Subsidiary (WCAU-TV), L.P. (herein NBC) proposes herein to move the television transmission facilities of WCAU-DT, channel 67 (788 to 794 megahertz (MHz)), Philadelphia, Pennsylvania, to a newly built tower located at geographic coordinates 40° 02' 30" North Latitude, 75° 14' 11" West Longitude (referenced to 1927 North American Datum), using an elliptically polarized omnidirectional antenna, 560 kilowatts (kW) horizontal effective radiated power (ERP) and 112 kW vertical ERP, and 377 meters antenna radiation center height above average terrain. The proposed WCAU-DT antenna radiation center is 352.1 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. A vertical plane relative field factor of 0.15, the maximum value obtained from the manufacturer's theoretical vertical plane radiation pattern for the proposed WCAU-DT transmitting antenna (Dielectric, type TFU-30GBH/VP-R O8) for any angle outside of the main vertical lobe, and the proposed total WCAU-DT ERP (horizontal plus vertical) of 672 kW were used in the calculation of the WCAU-DT power density. To account for ground reflections the U.S. Environmental Protection Agency recommended reflection coefficient of 1.6 was included in the calculation. The WCAU-DT power density calculation reported herein was made at 788 MHz, the lower edge of the WCAU-DT channel.

The FCC maximum permissible exposure (MPE) limit for general population/uncontrolled exposure is 0.53 milliwatt-per-square-centimeter ( $\text{mW}/\text{cm}^2$ ) at 788 MHz. The FCC MPE limit for occupational/controlled exposure is 2.6  $\text{mW}/\text{cm}^2$  at 788 MHz. At the base of the tower, the radiation center of the proposed WCAU-DT antenna is 350.1 meters above a reference point at two meters AGL and the calculated WCAU-DT power density (for a relative field of 0.15) is 0.00412  $\text{mW}/\text{cm}^2$ . This power density is 0.777 percent of the FCC MPE limit for general population/uncontrolled exposure and 0.158 percent of the FCC MPE limit for occupational/controlled exposure. The calculated exposure at the base of the tower represents a much higher exposure than any actual location on the ground would be expected to receive from the proposed antenna.

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" who

share responsibility for actions necessary to bring the local RFR environment into compliance with FCC exposure limits. Since the proposed WCAU-DT operation will contribute far less than 5.0 percent of the most restrictive permissible exposure at any location on the ground at the multiple-user site, WCAU-DT is not considered a “significant contributor” to the local RF exposure environment and contributions to exposure from other sources in the vicinity of WCAU-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 WCAU-DT operation will be a “significant contributor” to exposure at locations on the supporting structure near the WCAU-DT antenna when it is in use. If work is done on the tower in an area where overexposure could occur while the antenna is in use, NBC will take all actions necessary to prevent the overexposure of workers on the tower including reducing the transmitter power of WCAU-DT or ceasing transmission altogether. Additionally, NBC 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 WCAU-DT channel 67 television facility will utilize a existing supporting structure that is not in or near any location referenced in Section 1.1306(b)(1) of the FCC Rules as being of environmental interest.
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 location on an existing supporting structure is proposed.
3. Finally, with regard to RFR exposure concerns, compliance with applicable FCC MPE limits would be achieved.