



ENVIRONMENTAL AND RADIO FREQUENCY SAFETY

The licensee of WTAT-TV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WTAT-TV antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The predicted emissions of WTAT-TV must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WTAT-TV, which will operate on television Channel 17 (488-494 MHz), the MPE is 327.33 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) in an “uncontrolled” environment and 1,636.7 $\mu\text{W}/\text{cm}^2$ in a “controlled” environment. The proposed WTAT-TV facility will operate with a maximum ERP of 450 kW from an elliptically polarized directional transmitting antenna with a centerline height of 596.5 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WTAT-TV facility is predicted to produce a power density at two meters above ground level of 7.657 $\mu\text{W}/\text{cm}^2$, which is 2.34% of the FCC guideline value for an “uncontrolled” environment, and 0.47% of the FCC’s guideline value for “controlled” environments. There are two other full-power DTV broadcast facilities that are located at the WTAT-TV site. Therefore, the total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations within the relevant proximity, is 6.91% of the limit applicable to “uncontrolled” environments, and 1.38% of the limit for “controlled” environments. (See Appendix A)

APPENDIX A

SUMMARY OF RADIOFREQUENCY RADIATION STUDY

WTAT-TV, Charleston, SC
Channel 17, 450 kW, 599.4 m HAAT
October, 2018

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>WORST-CASE PREDICTED POWER DENSITY ($\mu\text{W}/\text{cm}^2$)</u>	<u>FCC UNCONTROLLED LIMIT ($\mu\text{W}/\text{cm}^2$)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WCIV	DT	25	539	H	580.4	1000.000	0.300	8.988	359.33	2.50%
WTAT-TV	DT	17	491	H & V	596.5	450.000	0.300	7.657	327.33	2.34%
WCBD-TV	DT	20	546	H	580	779.000	0.300	7.011	339.33	2.07%
TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =										6.91%

* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.