Consulting Engineers
CTJC
CARL T. JONES CORPORATION

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 ($\mu W/cm^2$) in an "uncontrolled" environment and 1,636.7 $\mu W/cm^2$ in a "controlled" environment. The proposed WTAT-TV facility will operate with a maximum ERP of 1000 kW from an horizontally polarized directional transmitting antenna with a centerline height of 580.4 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 8.988 $\mu W/cm^2$, which is 2.50% of the FCC guideline value for an "uncontrolled" environment, and 0.50% 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 6.70% of the limit applicable to "uncontrolled" environments, and 1.34% of the limit for "controlled" environments. (See Appendix A)

SUMMARY OF RADIOFREQUENCY
RADIATION STUDY
WTAT-TV, Charleston, SC
Channel 17, 1000 kW, 583.3 m HAAT
October, 2017

CALL	SERVICE	CHANNEL	FREQUENCY	POLAR-IZATION	ANTENNA HEIGHT	ERP (kW)	VERT. RELATIVE FIELD FACTOR	WORST-CASE PREDICTED POWER DENSITY (μW/cm²)	FCC UNCONTROLLED LIMIT (μW/cm²)	PERCENT OF UNCONTROLLED LIMIT
WCIV	DT	25	539	H	580.4	1000.000	0.300	8.988	359.33	2.50%
WTAT-TV	DT	17	491	H	580.4	1000.000	0.300	8.988	327.33	2.75%
WCBD-TV	DT	20	546	H	580	546.000	0.300	4.914	339.33	1.45%
								TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =		6.70%

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

Consulting Engineers
CTJC
CARL T. JONES CORPORATION