



ENVIROMENTAL AND RADIO FREQUENCY RADIATION COMPLIANCE STATEMENT

RADIO FREQUENCY IMPACT

The FCC's guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or "controlled" situations, and for "uncontrolled" environments that apply in all other cases that might affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated transmitting facilities, operations or devices comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. OET Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The Maximum Permitted Exposure (MPE) level for broadcast facilities that operate on a frequency between 30 MHZ and 300 MHZ is 200 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) for an "uncontrolled" environment, and is 1000 microwatts per centimeter

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squared ($\mu\text{W}/\text{cm}^2$) for a “controlled” environment. The MPE level for broadcast facilities that operate on a frequency between 300 MHz and 1500 MHz, primarily UHF TV stations, is determined, in $\mu\text{W}/\text{cm}^2$, for an “uncontrolled” environment by dividing the operating frequency in MHz by 1.500, and is similarly determined for a “controlled” environment by dividing the operating frequency in MHz by 0.300.

The predicted emissions of WTVD must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WTVD, which will operate on television Channel 9 (186-192 MHz), the MPE is 200.0 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) in an “uncontrolled” environment and 1,000.0 $\mu\text{W}/\text{cm}^2$ in a “controlled” environment. The proposed WTVD facility will operate with a maximum ERP of 45 kW from an elliptically polarized omni-directional transmitting antenna with a centerline height of 598.5 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WTVD facility is predicted to produce a power density at two meters above ground level of 0.76 $\mu\text{W}/\text{cm}^2$, which is 0.38% of the FCC guideline value for an “uncontrolled” environment, and 0.076% of the FCC’s guideline value for “controlled” environments. There are no other broadcast stations that are located at the WTVD site. Therefore, the total percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations within relevant proximity, is only from WTVD, which is 0.38% of the limit applicable to “uncontrolled” environments, and 0.076% of the limit for “controlled” environments. (See Appendix A)

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OCCUPATIONAL SAFETY

The licensee of WTVD is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WTVD 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.

SUMMARY OF RADIOFREQUENCY

RADIATION STUDY

WTVD, Durham, NC

Channel 9, 45 kW, 615 m HAAT

May, 2017

<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>
WTVD	DT	9	189	H & V	598.6	45.000	0.300	0.760	200.00	0.38%
TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =										
										0.38%

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