



## **ENVIRONMENTAL AND RADIO FREQUENCY SAFETY**

The licensee of WPNT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WPNT 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 WPNT must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WPNT, which will operate on television Channel 21 (512-518 MHz), the MPE is 343.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an “uncontrolled” environment and 1,716.7  $\mu\text{W}/\text{cm}^2$  in a “controlled” environment. The proposed WPNT facility will operate with a maximum ERP of 645 kW from an elliptically polarized directional transmitting antenna with a centerline height of 218.7 meters above ground level (AGL). Considering a conservative predicted vertical plane relative field factor of 0.300 the WPNT facility is predicted to produce a power density at two meters above ground level of 49.497  $\mu\text{W}/\text{cm}^2$ , which is 14.42% of the FCC guideline value for an “uncontrolled” environment, and 2.883% of the FCC’s guideline value for “controlled” environments. There is one other full-power DTV facility and one full-power FM station that are located at the WPNT site. The total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations located within the relevant proximity, is 63.73% of the limit applicable to “uncontrolled” environments, and 12.746% of the limit for “controlled” environments. (See Appendix A)

# SUMMARY OF RADIOFREQUENCY RADIATION STUDY

WPNT, Pittsburgh, PA  
Channel 21, 645 kW, 314.9 m HAAT  
June, 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 (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>FCC UNCONTROLLED LIMIT (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WPGH-TV**	DT	20	509	H	204.8	535.000	0.300	39.114	339.33	11.53%
WPGH-TV**	DT	20	509	V	204.8	229.300	0.300	16.764	339.33	4.94%
WPNT***	DT	21	515	H	216.7	645.000	0.300	42.074	343.33	12.25%
WPNT***	DT	21	515	V	216.7	113.800	0.300	7.423	343.33	2.16%
WLTJ	FM	225	92.9	H & V	162	43.000	<note 1>	65.698	200.00	32.85%

**TOTAL PERCENTAGE OF FCC GUIDELINE VALUE = 63.73%**

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

\*\* WPGH-TV is proposing elliptical polarization, the table above includes both the proposed horizontal and vertical power levels

\*\*\*WPNT is proposing elliptical polarization, the table above includes both the proposed horizontal and vertical power levels

note 1: FM Model Antenna: EPA Type 1; 4-bay, full wave spaced antenna,