

# **Non-Ionizing Radiation Analysis**

**W20AB  
Olean, NY**

## Environmental Statement

### Site Environmental Issues

The proposed site for this digital television facility is an existing tower site. ASR Number 1055303 has been in existence and is properly lighted according to all FAA and FCC rules and regulations. This application proposes to use an existing TV antenna with center of radiation 57 meters above ground. The effective radiated power will be 15.0 kW directional at 355 Degrees True. For the purposes of this study, a worst case formula is used for the DTV facility and for all FM facilities at the site. The form factor F for all antennas is 1.

No external physical changes are being made to the site.

### OET Bulletin 65 Compliance

A worst case formula for the power density of an FM, DTV and TV stations is:

$$S = \frac{(33.4)F^2(ERP)}{R^2}$$

where:

- S = highest power density in microwatts/sq.cm predicted at 2 meters above ground level
- F = typical relative field factor in the downward direction (-60 to -90 elevation. For this calculation, F=1)
- R = distance from 2 meters above ground to center of radiation in meters
- ERP = Effective Radiated Power in watts

The following Table 1 was constructed based on the operating and proposed facilities on the tower. Note that WVTT-CD, Channel 25, is listed at this site in Construction Permit number BDFCDTA-20110531AGF. That facility will not be constructed.

Table 1

Station	Channel	Facility ID	File Number	Total Power (Watts)	Distance to 2 meters above ground (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Maximum Allowed Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percentage of Maximum Density (%)
W230BO	230	153162	BLFT-20100127AGQ	105	42	1.99	200.00	0.99
W254BQ	254	146562	BLFT-20090728AAS	500	57	5.14	200.00	2.57
WVTT	244	21197	BLH-20090715AAK	920	47	13.91	200.00	6.96
W256BQ	256	21198	BLFT-20110425ABN	198	61	1.78	200.00	0.89
W30BW	30	68012	BLTT-20020307ABR	5900	50	78.82	381.30	20.67
W20AB	20	10868		15000	55	165.62	341.30	48.53
							Total Sum of Percentages	80.61

The total sum of the percentage power density of all pertinent facilities on the tower is less than the maximum allowed density based on uncontrolled area limits. The area will be clearly marked and access to the tower site limited to informed maintenance personnel.

Should the Commission require, the applicant will conduct measurements on this system to determine the non-ionizing radiation levels near the antenna site. Remedial steps will be taken if necessary to eliminate any human protection issues with this proposed installation. The applicant certifies that, in coordination with other users of the site, it will reduce power or cease operation as necessary to protect persons having access to the roof or top floor of the proposed site.




---

Charles F. Ellis, PE  
February 16, 2016