

Engineering Statement
COMPLIANCE WITH SPECIAL OPERATING CONDITIONS

Prepared July 2022 for
Virginia Tech Foundation, Inc.
WVTF(FM) Roanoke, Virginia
Facility ID: 70338
Ch. 206C 98 kW 606 m

Virginia Tech Foundation, Inc. (“VTF”) is the licensee of FM station WVTF(FM), Roanoke, Virginia. VTF has completed construction of the facility authorized in the construction permit (“CP”) FCC LMS File No. 162731 and commenced automatic program test operation.

The WVTF(FM) CP contains two Special Operating Conditions. As shown below, VTF has complied with both conditions. The details of the Transmitter Power Output calculations are provided in the attached **Table 1**.

First, a circularly polarized, ERI 6-bay full-wave spaced antenna Model SHPX-6 has been installed as specified in the Construction Permit application. This corresponds an EPA Type 3: opposed U dipole antenna used in the FM Model RF Exposure calculations therein. No further analysis is required with respect to the RF Exposure evaluation included in the construction permit application.

The second Special Operating Condition concerns radiofrequency electromagnetic field hazard warning signs. According to information provided by the applicant, warning signs continue to be posted on all sides of the tower fences and on the tower base.

Table 1
ANTENNA / LINE SYSTEM GAINS AND LOSSES
prepared July 2022 for
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Proposed Effective Radiated Power:		98 kW	19.91 dBk
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<u>Antenna System</u>			
ERI Model SHPX-6			
	Max Power Gain:	3.303	5.19 dB
	Antenna Input Power:	29.6 kW	14.72 dBk
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<u>Line and Other Losses</u>			
250' RFS RL412-50 4-1/2" Rigid Line			
	Loss:		0.20 dB
	Total Loss:		0.200 dB
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	<u>Transmitter Power Output:</u>	31.0 kW	14.92 dBk