

TECHNICAL STATEMENT OF RYAN WILLOUR OF THE FIRM OF  
KESSLER AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS  
IN CONNECTION WITH A LICENSE TO COVER APPLICATION FOR A FM  
BROADCAST STATION WWHA(FM) FCC FILE NUMBER BMPED-20100831AAQ  
FCC FACILITY IDENTIFICATION NUMBER 176879

The Federal Communications Commission “*Commission*” issued West Virginia Educational Broadcasting Authority “*WVEBA*” a construction permit to build a non-commercial FM broadcast station as specified in Construction Permit File Number BMPED-20100831AAQ. WVEBA has completed construction of the said facility in full compliance with the construction permitted technical parameters, special operating conditions, and restrictions as outlined below.

**Special Operating Conditions / Restrictions and Supporting Proof of Compliance:**

The following special operating conditions and restrictions are listed in Construction Permit File Number BMPED-20100831AAQ along with supporting exhibits providing complete certification of compliance.

**Special Operating Condition #1:**

BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit the results of a complete proof-of-performance to establish the horizontal plane radiation patterns for both the horizontally and vertically polarized radiation components. This proof-of-performance may be accomplished using the complete full size antenna, or individual bays therefrom, mounted on a supporting structure of identical dimensions and configuration as the proposed structure, including all braces, ladders, conduits, coaxial lines, and other appurtenances; or using a

carefully manufactured scale model of the entire antenna, or individual bays therefrom, mounted on an equally scaled model of the proposed supporting structure, including all appurtenances. Engineering exhibits should include a description of the antenna testing facilities and equipment employed, including appropriate photographs or sketches and a description of the testing procedures, including scale factor, measurements frequency, and equipment calibration.

Proof of Compliance:

Exhibit 10.1 is a complete proof of performance certification from the antenna manufacturer which satisfies the requirements of special operating condition #1

**Special Operating Condition #2**

BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit an affidavit from a licensed surveyor to establish that the directional antenna has been oriented at the proper azimuth.

Proof of Compliance:

Exhibit 10.2 is an affidavit from a licensed surveyor certifying that the antenna has been oriented to the proper azimuth. This affidavit satisfies the requirements of Special Operating Condition #2.

**Special Operating Condition #3**

BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee/licensee shall submit an affidavit that the installation of the directional antenna system was overseen by a qualified engineer. This affidavit shall include a certification by the engineer that the antenna was installed pursuant to the manufacturer's instructions and list the qualifications of the certifying engineer.

Proof of Compliance:

Exhibit 10.3 is an affidavit from the WVEBA station engineer who was on site to oversee the complete installation of the antenna. This affidavit satisfies the requirements of Special Operating Condition #3

Special Operating Condition #4

The relative field strength of neither the measured horizontally nor vertically polarized radiation component shall exceed at any azimuth the value indicated on the composite radiation pattern authorized by this construction permit. A relative field strength of 1.0 on the composite radiation pattern herein authorized corresponds to the following effective radiated power:

- 0.85 kilowatt.

Principal minima and their associated field strength limits:

- 180 degrees True: 0.140 kilowatt
- 270 degrees True: 0.49 kilowatt.

Proof of Compliance:

Exhibit 10.1 page 7 of 13 of the antenna manufacturer's proof of performance demonstrates that the measured composite antenna pattern does not exceed the construction permitted antenna pattern for any azimuth value. Exhibit 10.1 Page 9 of 13 indicates that a relative field strength of 1.0 at 80 degrees of the composite radiation pattern corresponds to a maximum effective radiated power of 0.85kW and that the measured composite principal minima field strength limits shall be 0.09kW for 180 degrees and 0.47kW for 270 degrees and are thus well below the permitted thresholds. Compliance with the requirements of special operating condition #4 is thus satisfied.

### **Special Operating Condition #5**

BEFORE PROGRAM TESTS ARE AUTHORIZED, the permittee must submit an exhibit demonstrating that the measured directional antenna pattern complies with the appropriate community coverage provisions of 47 C.F.R. Sections 73.315 or 73.515 (See 47 C.F.R. Section 73.316(c)(2)(ix)(B)).

#### **Proof of Compliance:**

Exhibit 10.4 demonstrates the construction permitted blue 1mV/m (60 dBu) field strength contour in relation to the green 1mV/m (60 dBu) field strength contour using the composite measured antenna pattern from the antenna manufacturer's proof of performance data on page 9 of 13 of Exhibit 10.1. Pursuant to Section 73.316(c)(2)(ix)(B), Exhibit 10.4 demonstrates that the 1mV/m (60 dBu) contour from the measured antenna composite pattern covers all of the community of license Webster Springs. Although not specifically addressed in the construction permit and special operating conditions, the measured composite antenna pattern exceeds the minimum 85 percent RMS value of the construction permitted antenna pattern pursuant to Section 73.316(c)(2)(ix)(A). Exhibit 10.1 Page 2 of 13 demonstrates that the measured composite antenna pattern is 88.7 percent of the RMS value of the construction permitted antenna and is thus well in compliance. This study satisfies the requirements of Special Operating Condition #5

**The Following Operating Restrictions shall be Observed:**

- West Virginia Educational Broadcasting Authority requested and was granted a waiver of Section 73.1125 to operate WWHHA(FM) as a “satellite” of co-owned, noncommercial educational FM station WVPN(FM), Charleston, West Virginia, Facility ID No. 70604. As such, WWHHA(FM) shall be operated in accordance to the waiver as a “satellite” station of WVPN(FM).
- WVEBA in coordination with other users of the site will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

**Conclusion and Certification:**

As demonstrated, all special operating conditions and restrictions have been fully satisfied in the instant license to cover application. As such, program test authority is respectfully requested for full power operation. The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on January 10, 2012.

KESSLER AND GEHMAN ASSOCIATES, INC.



Ryan Wilhour

Consulting Engineer