

# COMPREHENSIVE ENGINEERING STATEMENT

prepared for

## WASU-FM

WASU-FM(Aux) Boone, North Carolina

Facility ID 2467

Ch. 213A 0.027 kW 5 m

*WASU-FM*, is the licensee of FM radio station WASU-FM (Ch. 217C, Boone, North Carolina). The WASU-FM auxiliary antenna is currently licensed under FCC file number BXMLED-20110803ABA. *WASU-FM* herein proposes to modify the station's auxiliary antenna, to specify a new location on the campus. Specifically, *WASU-FM* seeks to relocate the auxiliary antenna to 36° 12' 51.9" N Latitude and 81° 40' 39.9" W Longitude (NAD83), with an Effective Radiated Power ("ERP") of 0.027 kW and an antenna height above average terrain ("HAAT") of 5 meters.

**Figure 1** demonstrates that the 60 dB $\mu$  (1 mV/m) contour of the proposed auxiliary facility would not extend beyond the bounds of the 60 dB $\mu$  contour of the authorized main facility, in compliance with §73.1675(a)(1). Because minimum distance spacing and contour protection rules do not apply to auxiliary facilities, the instant proposal is believed to comply with all pertinent FCC allocations requirements.

Based on data extracted from the FCC's CDBS database, broadcast station WXIT(AM) and WATA(AM) are located within 3.2 km (2 miles) of the proposed site. The proposed support structure is an existing 10 story dormitory building. The rooftop antenna mounting will have no effect on the radiation pattern of these AM stations.

The nearest FCC monitoring station is at Powder Springs, Georgia at a distance of 381.2 km from the proposed site and the Green Bank NRAO Quiet Zone is 177.2 km distant. This exceeds by a great margin the minimum distance specified in §73.1030(c)(3)(iv) that would suggest consideration of the monitoring station.

It is thus believed that the facility proposed herein will satisfy all pertinent Commission Rules and Policies now in effect regarding allocation matters for an auxiliary facility.

## Environmental Considerations

The proposed antenna is a Shively model 6812-3, which is a 3-bay, full wave spaced antenna, which corresponds to the EPA Type 1: Ring and Stub style antenna. It will be mounted on the

## COMPREHENSIVE ENGINEERING STATEMENT

(page 2 of 3)

rooftop penthouse of an existing building. The proposed effective radiated power (“ERP”) is 0.027 kilowatts with an antenna height above ground of 42.7 meters.

The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. No change in structure height is proposed, thus no change in current structure marking and lighting requirements is anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission’s rules.

### **Human Exposure to Radiofrequency Radiation**

In keeping with §1.1307(b) of the Commission’s Rules, the proposed operation has been evaluated for human exposure to radiofrequency energy using the procedures outlined by the Federal Communications Commission in FCC OET Bulletin 65 (“OET-65”). OET-65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines specified in §1.1310 of the Commission’s Rules. Under present Commission policy, a facility may be presumed to comply with the limits in §1.1310 of the Commission’s Rules if it satisfies the exposure criteria set forth in OET-65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

The general population/uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for the entire FM broadcast band is  $200 \mu\text{W}/\text{cm}^2$ . For the purpose of this study, “public access” will be considered at the base of the building at a location two meters above ground. Using the FCC’s FM Model program and an EPA Type 1: Ring-and-Stub antenna, it was determined that the proposed facility would contribute a worst-case RF power density of  $0.647 \mu\text{W}/\text{cm}^2$  at two meters above ground level, or 0.32 percent of the general population/uncontrolled limit. Thus, based on this analysis, the Commission’s limit regarding general population / uncontrolled exposure to RF electromagnetic field is not exceeded at ground level locations near the WASU-FM Auxiliary site location. No other broadcasters are close enough to have a significant additional contribution to exposure levels at this location.

### **Safety of Workers and the General Public**

As demonstrated herein, excessive levels of RF energy attributable to WASU-FM will not be caused at publicly accessible areas at ground level near the building. Consequently, members of the

## **COMPREHENSIVE ENGINEERING STATEMENT**

(page 3 of 3)

general public will not be exposed to RF levels in excess of the Commission's guidelines.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy is employed protecting maintenance workers from excessive exposure when work must be performed on the rooftop near the antenna or in areas where high RF levels may be present. Such protective measures include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas.

### **Conclusion**

Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under §1.1306 of the Rules; hence preparation of an Environmental Assessment is not required.

**FIGURE 1**  
**COVERAGE CONTOUR COMPARISON**  
*prepared February 2022*

**WASU-FM**  
WASU-FM (Aux) Boone, NC  
Facility ID 2467  
CH. 213A 0.027 kW 5 m  
**Cavell, Mertz & Associates, Inc.**  
Manassas, Virginia

**WASU-FM License**  
0.14 kW 381 m HAAT  
60 dB $\mu$  F(50,50)  
Coverage Contour

**WASU-FM (Aux) Proposed**  
0.027 kW 5 m HAAT  
60 dB $\mu$  F(50,50)  
Coverage Contour

**Boone, NC**

