

ENGINEERING EXHIBIT  
IN SUPPORT OF AN  
APPLICATION FOR MODIFICATION OF A  
CONSTRUCTION PERMIT  
FCC FILE NO. BXP-20120510ACL  
FOR AN AUXILIARY ANTENNA  
WWRC - WASHINGTON, DISTRICT OF COLUMBIA  
LICENSED MAIN: 1260 kHz - 35.0 kW DAY/5.0 kW NIGHT - DA-2  
PROPOSED AUXILIARY: 1260 kHz – 2.9 kW Day - ND-D  
Facility ID: 8681

Applicant: Salem Media of Virginia, Inc.

July, 2014



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STATEMENT OF CYNTHIA M. JACOBSON, P.E.

FIGURE

Present and Proposed Daytime 0.5 mV/m Contours..... 1



ENGINEERING STATEMENT OF CYNTHIA M. JACOBSON, P.E.  
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Applicant: Salem Media of Virginia, Inc.

I am a Radio Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia.

My education and experience are a matter of record with the Federal Communications Commission. I am a Registered Professional Engineer in the Commonwealth of Virginia, Registration No. 027914.

**GENERAL**

This office has been authorized by Salem Media of Virginia, Inc. (“Salem”), licensee of Standard Broadcast Station WWRC, Washington, District of Columbia, to prepare this statement, FCC Form 301 (Section III), and the attached engineering exhibits in support of an Application for Modification of a Construction Permit (FCC File No. BXP-20120510ACL), to increase the power level of the auxiliary transmission



system for WWRC from 1.1 kW to 2.9 kW. The auxiliary antenna will be employed during daytime hours when the main facility is off the air during emergencies or for equipment maintenance.

### **TECHNICAL FACILITIES**

It is proposed to utilize the WAVA tower on a non-directional basis at 2.9 kW daytime. The tower registration number is 1231205. The radiator is 135.2 electrical degrees in height and has a theoretical efficiency of 335.4 mV/m/kW at one kilometer at WWRC's operating frequency of 1260 kHz.

The existing ground system consists of 120 equally spaced, buried, copper wires extending outward radially from the auxiliary tower, each 91.4 meters in length.

### **PREDICTED COVERAGE CONTOURS**

The predicted 0.5 mV/m daytime coverage contours for the licensed main facility and the proposed auxiliary facility are shown in Figure 1. As shown, the proposed auxiliary 0.5 mV/m daytime contour is predicted to be entirely within the licensed main 0.5 mV/m daytime contour as required by 73.1675(a)(1) of the Rules.

Field strength contours were calculated using the "equivalent distance" method.

### **ENVIRONMENTAL IMPACT**

The proposal described herein does not involve high intensity lighting as specified in Section 1.1307(a)(8) of the Rules, nor will it result in human exposure to

radiofrequency radiation in excess of the standards specified in Section 1.1307(b). The applicant has determined that under the provision of Section 1.1306, the proposal is excluded from environmental processing. No new tower construction is necessary.

### **RADIO-FREQUENCY IMPACT**

On January 1, 1986, the FCC amended its Rules to implement the National Environmental Policy Act of 1969 (NEPA). This amendment established RF radiation protection guidelines to be used to determine if potentially harmful RF exposure is possible from an FCC-regulated transmission facility. Effective October 15, 1997, the FCC adopted revised guidelines and procedures for evaluating the environmental effects of RF emissions. These revised guidelines incorporate two tiers of exposure limits based on whether exposure occurs in a “controlled” (occupational) situation or an “uncontrolled” (general population) situation. The FCC has also revised OET Bulletin No. 65 entitled, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, to aid in the radiation exposure analysis. This bulletin, as well as other current literature, provides detailed information for conducting an analysis including mathematical equations that can be used to determine compliance with the Commission’s guidelines. The proposed WWRC auxiliary facility will be co-located with WAVA(AM) and the auxiliary FM facilities of WAVA-FM and WIAD(FM). Thus, the proposed site is considered a multiple use site.

### **TOWER AND PROPERTY FENCING**

Access to the tower is restricted by means of a protective fencing and a locked gate. At its closest point, the tower fence is 4.7 meters (15 feet 6 inches) from the shared tower. RFR warning signs are posted at appropriate intervals. It is believed that the existing fencing is adequate. The applicant will conduct electromagnetic field strength measurements if deemed necessary by the Commission, to establish that the MPE limits specified by the FCC are not exceeded.

### **OCCUPATIONAL SAFETY**

WWRC will insure that the protection of station personnel or tower contractors working in the vicinity of the WAVA(AM)/WIAD(FM) auxiliary/WAVA-FM auxiliary transmitting antenna. The applicant will reduce power and/or cease operation during times of service of maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel. In addition, the applicant will become party to any agreement among the site users to further ensure the safety of workers and the general public.

In light of the above, the proposed facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

### **CONCLUSION**

This statement and Section III of FCC Form 301 and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct.

It is submitted that the proposed operation described herein complies with the technical standards of the Rules and Regulations of the Commission.

DATED: July 10, 2014



**FIGURE 1**

