

**WKBR-FM**  
**Summerville, South Carolina**  
**Application for Modified Facilities for Noncommercial FM Station**  
**On Channel 205 Class C1**  
**by**  
**Spirit Broadcasting Group, Inc.**

**Exhibit 24**  
**Compliance with Electromagnetic Exposure Limits**

**March 2013**

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 24 Compliance with Electromagnetic Exposure Limits for Spirit Broadcasting Group, Inc., and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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30 March 2013

### Narrative

This Exhibit provides details of the Compliance with Electromagnetic Exposure Limits for the proposed new station to serve Summerville, South Carolina. The facility requires calculations which are beyond the scope of the worksheets for FCC Form 340. This proposal was studied under the procedures in FCC Bulletin OET-65<sup>1</sup> to determine compliance.

It is noted that this exhibit only addresses the potential for radiofrequency electromagnetic field exposure. The applicant for antenna structure registration will address any other areas of concern.

### Summerville Calculations

The Summerville facilities, when evaluated under worst case methods in OET-65<sup>2</sup>, would create 0.52 mW/cm<sup>2</sup> at 2 meters above ground level, which exceeds the limit for uncontrolled/ general population areas. When the vertical elevation pattern of the antenna, a Shively Model 6025 four level antenna array, is considered, the power density at 2 meters above ground level will be significantly reduced. Using the manufacturer's elevation pattern and the equations in OET-65, the maximum electromagnetic power density is 0.012 mW/cm<sup>2</sup> at a distance of 140 meters from the tower base, or 6% of the maximum uncontrolled/public exposure. The power density is plotted as Figure 1.

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<sup>1</sup> Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01, Robert F. Cleveland, Jr., David M. Sylvar, and Jerry L. Ulcek, and Supplement A, Additional Information for Radio and Television Broadcast Stations.

<sup>2</sup> *ibid.*

**Figure 1: Calculated Nonionizing Electromagnetic Radiofrequency Radiation**

