

**WKRI**  
**Cokesbury, South Carolina**  
**Application for Modified Facilities for New Noncommercial FM Station**  
**On Channel 220 Class C3**  
**by**  
**Spirit Broadcasting Group, Inc.**

**Exhibit 19**  
**Television Channel 6 Protection Under 47 C.F.R. §73.525**

**September 2010**

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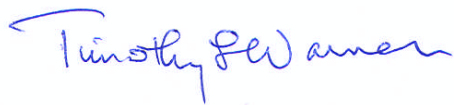
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Declaration

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 19, Television Channel 6 Protection Under 47 C.F.R. §73.525 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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24 September 2010

### Narrative

This Exhibit provides details of the Television Channel 6 Protection under 47 C.F.R. §73.525 for the proposed modified facilities for WKRI, Cokesbury, South Carolina.

### Interference Calculations

The only television channel six station which is an effected station according to §73.525(a)(1) is WCES-TV, Wrens, Georgia. Protection is provided under the contour methods in §73.525(e). Figure 1 shows the WCES-TV 47 dBu F(50,50) Grade B contour.

The Effective Radiated Power for the Cokesbury facility is adjusted for mixed polarization as follows:

$$\text{Power} = [\text{Horizontal ERP} + (\text{Vertical ERP}/A)] \quad \text{where in this case } A=40$$

because the entire predicted interference area lies outside any cities with populations of 50,000 persons or more<sup>1</sup>.

For this facility, the proposed ERP is 25,000 Watts Vertical and 25,000 Watts Horizontal. Therefore Power = 25,625 Watts.

### Interference Population

There is no area where WCES-TV is predicted to receive interference from the Cokesbury proposal. This application is therefore in compliance with the limit of no more than 3,000 persons as listed in §73.525(c).

### Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and

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<sup>1</sup> §73.525(e)(4)(ii)

proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments. Terrain data is extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database. The USGS National Elevation Dataset has been developed by merging the highest-resolution, best-quality elevation data available across the United States into a seamless raster format. NED is the result of the maturation of the USGS effort to provide 1:24,000-scale Digital Elevation Model (DEM) data for the conterminous US and 1:63,360-scale DEM data for Alaska.

All population data is from 2000 U.S. Census SF1 data files. Population is counted by considering the location of the centroid of each census bloc. The data for each block is counted if it falls within the area being counted.

