

ENGINEERING STATEMENT OF RYAN WILLOUR OF THE FIRM KESSLER  
AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS IN  
CONNECTION WITH A MODIFICATION TO AN AUTHORIZED FM  
BROADCAST STATION LICENSE FCC FILE NUMBER BLED-1557  
SOUTH CAROLINA EDUCATIONAL TELEVISION COMMISSION  
WLTR(FM)  
COLUMBIA, SOUTH CAROLINA

PROCLAMATION OF ENGINEER

I, Ryan Wilhour, am an associate of Kessler and Gehman Associates, Inc. with offices in Gainesville, Florida. I am a graduate of the University of Florida with a Bachelor of Science degree in electrical engineering.

APPLICATION SUMMARY

This firm has been retained by South Carolina Educational Television Commission (hereinafter referred to as "SCETV") to prepare a modification to an authorized FM broadcast station license, FCC file number BLED-1557. It is herein proposed to replace the licensed broadcast antenna with a new broadcast antenna made by Dielectric, having the following model number DCRM12FET5F10P. The replacement antenna utilizes a  $7/10$  or 0.7 wavelength bay spacing<sup>1</sup> in order to achieve null fill.

---

<sup>1</sup> 90 inches separate each bay.

The instant application is being filed in compliance with section 73.1690(c)(1)<sup>2</sup> since the antenna azimuth pattern, maximum ERP, and effective antenna center of radiation height are not being modified.

### ENVIRONMENTAL IMPACT/RFR HAZARD ANALYSIS

An analysis has been made of the human exposure to RFR using the calculation methodology described in OET Bulletin 65, Edition, 97-01. Exhibit E1 is a RFR study demonstrating compliance within 5% of the most restrictive permissible exposure at any location 2 meters above the ground (See Methodology). Exhibit E1 calculations were made using a frequency of 91.2 MHz, which is the lower edge of the proposed channel. To account for ground reflections, a coefficient of 1.6 was included in the calculations.

Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is well within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of WLTR(FM) were not taken into account. The instant proposal complies with the FCC limits for human exposure to RF radiation and thus is excluded from further environmental processing.


---

<sup>2</sup> Replacement of an omni-directional antenna with one of the same or different number of antenna bays, provided that the height of the antenna radiation center is not more than 2 meters above or 4 meters below the authorized values. Any concurrent change in ERP must comply with §73.1675(c)(1), 73.1690(c)(4), (c)(5), or (c)(7). Program test operations at the full authorized ERP may commence immediately upon installation pursuant to §73.1620(a)(1).

The applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off in order to protect maintenance workers on the tower.

DECLARATION OF ENGINEER

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on December 08, 2004.

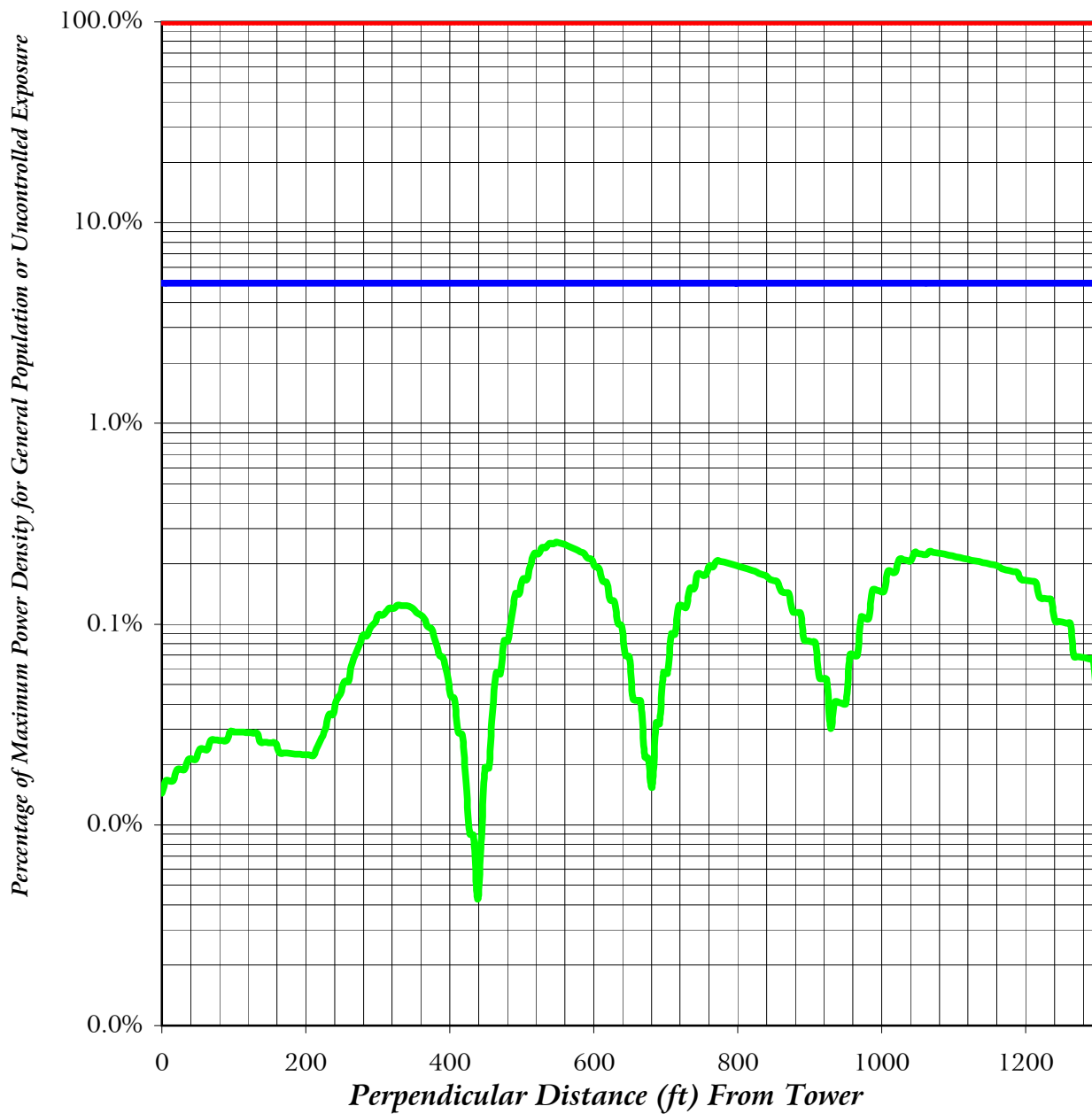
The logo for Kessler and Gehman Associates, Inc. (KGA) features the letters "KGA" in a stylized, serif font. The letters are white with a black outline and are positioned above a thick, horizontal gray bar.

Ryan Wilhour

A handwritten signature in blue ink that reads "Ryan Wilhour". The signature is written in a cursive, flowing style.

Consulting Engineer

## FAR FIELD EXPOSURE TO RF EMISSIONS



- Maximum Allowable General Population or Uncontrolled Exposure
- 5 % of Maximum General Population or Uncontrolled Exposure
- Percentage of Maximum General Population or Uncontrolled Exposure

**KESSLER & GEHMAN**

TELECOMMUNICATIONS CONSULTING ENGINEERS

507 N.W. 60th Street, Suite C

Gainesville, Florida 32607

WLTR(FM)  
COLUMBIA, SOUTH CAROLINA

20041208

EXHIBIT E1



METHODOLOGY AND EXPLANATION OF  
ENVIRONMENTAL IMPACT / RADIO FREQUENCY RADIATION  
HAZARD ANALYSIS

A theoretical analysis has been conducted of the human exposure to radio frequency radiation ("RFR") using the calculation methodology described in *OET Bulletin 65, Edition 97-01*. The RFR analysis is conducted pursuant to the following methodology:

Terrain<sup>1</sup> extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

---

<sup>1</sup> Terrain extraction is based upon a 3 arc second point spacing terrain database.