

TECHNICAL STATEMENT OF RYAN WILHOUR OF THE FIRM OF  
KESSLER AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS  
IN CONNECTION WITH A NEW DIGITAL COMPANION CHANNEL TV  
TRANSLATOR BROADCAST STATION W41AA-LD  
WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY  
WHEELING, WEST VIRGINIA

**ENVIRONMENTAL IMPACT / RFR HAZARD ANALYSIS**

A theoretical analysis has been made of the human exposure to Radio Frequency Radiation (“RFR”) using the calculation methodology described in *OET Bulletin 65, Edition, 97-01*. Exhibit E1 demonstrates the following colored contours:

- Green - The Proposed Station’s RFR Level as a Percentage of the Maximum Permissible General Population Exposure RFR Limit.
- Red – Maximum Permissible General Population Exposure RFR Limit.
- Blue – 5% of the Maximum Permissible General Population Exposure RFR Limit.

Pursuant to OET Bulletin 65 concerning multiple user transmitter sites, only those transmitters which produce power density levels greater than 5.0% of the maximum general population exposure RFR limit are considered significant contributors. As demonstrated in Exhibit E1, the proposed facility is below 5% of the maximum permissible general population exposure RFR limit threshold at any location 2 meters above the ground, and is not considered a significant contributor to RFR. Thus, contributions to exposure from other RF sources in the vicinity of W41AA-LD were not taken into account. The proposed facility

complies with the FCC limits for human exposure to RFR, and thus is categorically excluded from further environmental processing.

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**

I, Ryan Wilhour, declare and state that I am a graduate electrical engineer with a Bachelor of Science in Electrical Engineering and my qualifications are a matter of record with the Federal Communication Commission, and that I am an engineer in the firm of Kessler and Gehman Associates, Inc., and that firm has been retained by West Virginia Educational Broadcasting Authority to prepare the herein statement.

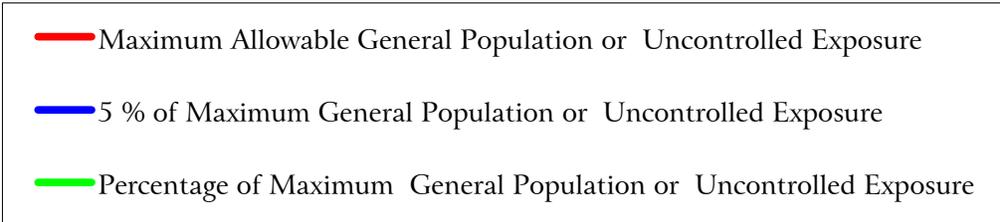
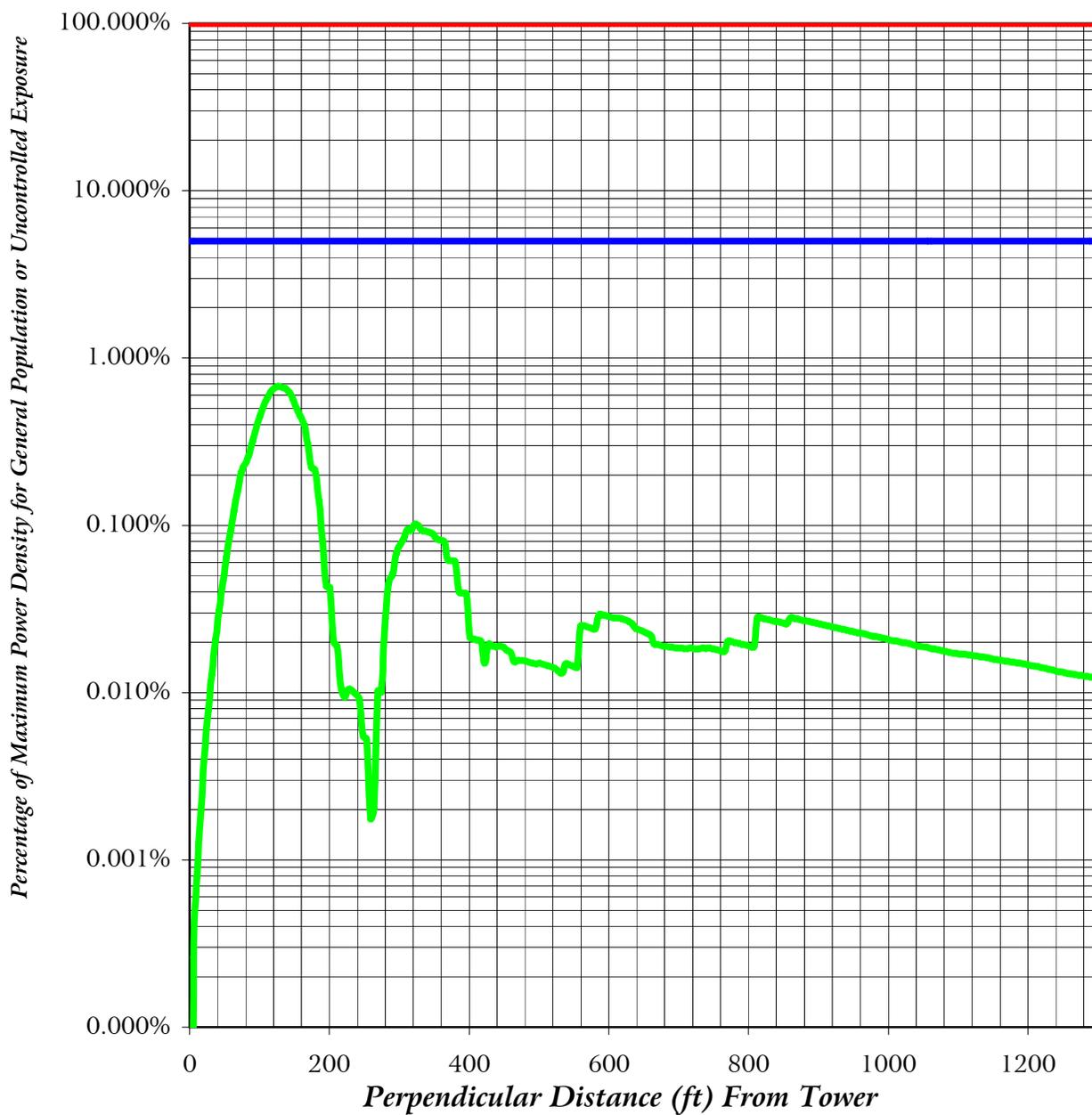
The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge.

KESSLER AND GEHMAN ASSOCIATES, INC.



Ryan Wilhour  
Consulting Engineer

# FAR FIELD EXPOSURE TO RF EMISSIONS



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.