

## **Environmental Impact / RFR Hazard Analysis Study Methodology and Narrative**

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

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

population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

The resulting RFR study demonstrates that the peak exposure is 53.5% of the most restrictive permissible exposure threshold. 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 beyond 5% of the most permissible exposure at any location 2 meters above the ground, it is considered a significant contributor to RFR exposure. The transmitter site is a complex multi-user shared site and is beyond the scope of theoretical calculations. Upon completion of construction, measurements will be taken to ensure that the proposed site is in compliance with the FCC's RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect with the other stations in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing or scheduling work when the stations are at reduced power or are able to shut down.

## FAR FIELD EXPOSURE TO RF EMISSIONS

