

EXHIBIT 46  
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NONIONIZING RADIATION COMPLIANCE  
Free State Communications, LLC  
Topeka, KS

The proposed KTKA-DT post-transition DTV facilities will fully comply with the current FCC Standard with regard to human exposure to nonionizing radiation. The proposed facilities will operate with a maximum average effective radiated power of 89.1 kilowatts using an Andrew ATW25H3-HTPXU-49H directional antenna that will be mounted with its center of radiation at 431.5 meters above ground level on an existing 438.7 meter tower.

Equation (2), found on Page 30 of Supplement A to FCC OET Bulletin 65, details the calculation technique used to determine the power density at the base of a TV broadcast tower. In this case, however, it is necessary to substitute the proposed average DTV effective radiated power (89.1 kilowatts) for the expression  $[0.4ERP_V + ERP_A]$  in this equation to compensate for the fact that DTV power levels are expressed in terms of average power, rather than peak power, as is the case for the visual portion of an analog TV signal. Utilizing the vertical radiation pattern data for this antenna contained in Exhibit 43 to the attached application in conjunction with this equation yields a predicted a worst case power density at two meters above ground level of 0.036  $\mu\text{W}/\text{cm}^2$ . Since the maximum permitted power density for uncontrolled exposure on TV Channel 49 is 453.3  $\mu\text{W}/\text{cm}^2$ , this amounts to only 0.008% of the permitted level for uncontrolled exposure. Since this value is less than 5% of the permitted level, the proposed KTKA-DT post-transition facilities are excluded from environmental processing under this standard and need not be considered in conjunction with other co-located and nearby facilities to establish compliance with this exposure standard.

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KTKA-DT, in conjunction with other co-located facilities, will continue to take appropriate steps to insure that workers who must climb this tower will not be exposed to power density levels that are in excess of the permitted level for controlled exposure. These steps will include a reduction in power or the cessation of operation, as appropriate, at any time that workers must be on this tower in any area where the total power density levels exceed the permitted level for controlled exposure.