Exhibit B
Response to Question 28

This attachment analyzes the power-flux density near the proposed transmit antenna. The antenna will be a parabolic 0.84 m antenna with a transmit gain of 20.6 dBi. The site will transmit a peak EIRP of 16.5 dBW. The power-flux density calculations in this exhibit are based on this peak EIRP value. These calculations follow the methodology outlined in OET Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." The power-flux density calculations are made for a transmitting frequency of 1631.5 MHz. At this frequency, the maximum permissible exposure to RF fields in a controlled environment is 5 mW/cm^2.

Far Field Calculations

The distance to the beginning of the far field, D_f, for a circular aperture antenna is given by Equation 16 of OET Bulletin 65:

$$D_f = (0.6\ D^2) / \lambda$$

For an antenna size of 0.84 m, the far field distance is 2.2 m.

The maximum power-flux density in the far field is given by Equation 4 of OET Bulletin 65:

$$P_d = EIRP / (4\pi\ D_f^2)$$

For a 0.84 m antenna, the maximum power-flux density in the far field is 0.7 mW/cm^2.

Near Field Calculations

The maximum power-flux density for the near field, $P_d(nf)$ is given by Equation 13 of OET Bulletin 65:

$$P_d(nf) = 16\ \eta P_{RF} / (\pi\ D^2)$$

where P_{RF} = RF power input to the antenna
D = antenna diameter
η = aperture efficiency (60% used)

For a 0.84 m antenna, the maximum power-flux density in the near field is 0.17 mW/cm^2.

Conclusion

This site is in a controlled environment. The general public does not have access to the site where the transmit antenna is located. The maximum permissible exposure to RF fields in a controlled environment is 5 mW/cm^2 at the L band. The calculations show that the site will not exceed the permissible levels for exposure to RF radiation.