RF HAZARD STATEMENT
FIXED EARTH STATION
LARGO, FLORIDA

This Engineering Statement was prepared on behalf of Christian Television Network, Inc., in support of an evaluation of the radio frequency (RF) environment in the vicinity of a fixed earth station antenna. This statement details compliance with Section 1.1307(b) of the FCC Rules concerning human exposure RF energy. This statement also details the RF safety work rules for the safe operation of the proposed facility.

Background

The proposed facility will transmit in the C-Band with a maximum EIRP of 57.0 dBW. The facility will employ an Antesky 6.2-meter aperture antenna, which is to be mounted on the ground on a concrete foundation according to the manufacturer specifications. The antenna will have a maximum overall height of 7.4 m above ground level.

Calculated RF Exposure Levels

Based on Section 73.1310 of the FCC Rules, the pertinent maximum permissible exposure (MPE) limits for the subject facility are as follows:

Frequency (MHz)	MPE for General Population/Uncontrolled Exposure (mW/cm^2)	MPE for Occupational / Controlled Exposure (mW/cm^2)
5,925 – 6,425	1.0	5.0

Calculations of RF exposure were conducted pursuant to the FCC's OET Bulletin No. 65, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields* (Edition 97-01, August 1997). The following parameters were employed in the calculations:

Antenna Gain = 50.0 dBi
Frequency = 6,000 MHz
Diameter = 6.2 m = 620 cm
Maximum Input Power = 5 watts = 5,000 mW
Efficiency Factor (calculated) = 0.659

The following is calculated based on the equations contained in FCC OET Bulletin No. 65:

Extent of near-field, R_{nf} = 192.2 m
Maximum on-axis near-field power density, S_{nf} = 0.044 mW/cm^2
Distance to beginning of far-field, R_{ff} = 461.3 m
Far-field on-axis power density, S_{ff} = 0.019 mW/cm^2

Based on FCC OET Bulletin No. 65, "for off-axis calculations in the near-field and in the transition region it can be assumed that, if the point of interest is at least one antenna diameter removed from the center of the main beam, the power density at that point would be at least a factor 100 (20 dB) less than the value calculated for the equivalent distance in the main beam."[*] At one antenna diameter distance (6.2 m) off-axis from the antenna main beam, the power density level would, therefore, be less than (S_{nf} /100=) 0.00044 mW/cm^2 at 6.2 m or more removed from the center of the main beam of the antenna.

For areas in the vicinity of the antenna, calculations based on simple far-field calculations were used to estimate the RF exposure levels for locations located from 48° and greater off-axis.[†] Based on these calculations, the general population /

[*] See ¶2 on Page 31 of OET Bulletin No. 65.
[†] See ¶3 on Page 31 of OET Bulletin No. 65 with reference to Equation 18 on Page 30.

uncontrolled environment requirement of 1.0 mW/cm^2 would be met at distances exceeding 0.1 m from the dish.

Based on the above, the area within 6.2 meters (20 feet) or greater from the center of the main beam, and within 0.1 m (0.33 ft) at 48° or greater off-axis from the dish itself, shall be restricted from access and properly posted warning signs. RF energy levels outside of the restricted area will be below the FCC MPE for general population / uncontrolled environments. Therefore, the proposed facility meets the requirements of Section 1.1307(b) concerning human exposure to RF energy.

Work Rules for Control of RF Exposure

All persons must adhere to the following work rules for compliance with the FCC guidelines for human exposure RF energy.

1. No persons shall be within the restricted area surrounding the earth station antenna when it is transmitting.

2. In the event persons are required to enter the restricted area surrounding the earth station antenna, the antenna transmissions will be terminated until all persons exit the restricted area.

3. The applicant shall ensure that no building or other obstacles will be in the areas that exceed the MPE levels.

Louis R. du Treil, Jr., P.E.

du Treil, Lundin & Rackley, Inc.
201 Fletcher Ave.
Sarasota, Florida 34237
(941)329-6000

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