# KLPW STA
Environmental Protection Statement

An analysis of the proposed KLPW Special Temporary Authority site was performed using the Commission's FM Model program. The proposed antenna is a two bay horizontally polarized omni-directional SWR FM1H/2-DF. This model will be half-wave spaced with a maximum ERP of 0.700 kW horizontally polarized only. The antenna is mounted with center of radiation at 8.2 meters above ground. The analysis is based on protection at the base of this tower at 3.02 meters above ground, the level of the metal roof on a building adjacent to the tower. Ground level radiation will be less than that calculated by this method. The 2 bay, half-wave spaced antenna was analyzed using the following parameters.

Horizontally Polarized Radiation	0.700 kW
Vertically Polarized Radiation	0.00 kW
Distance from COR to 3.02 m above ground	5.18 meters
Type of Antenna	SWR Model FM1H/2-DF
Number of Bays	2
Antenna Element Spacing	1/2 Wavelength
FM Model Antenna Type:	Ring Stub with no vertical power

The following Figure 1 was produced using the FCC FM Model:

Figure 1
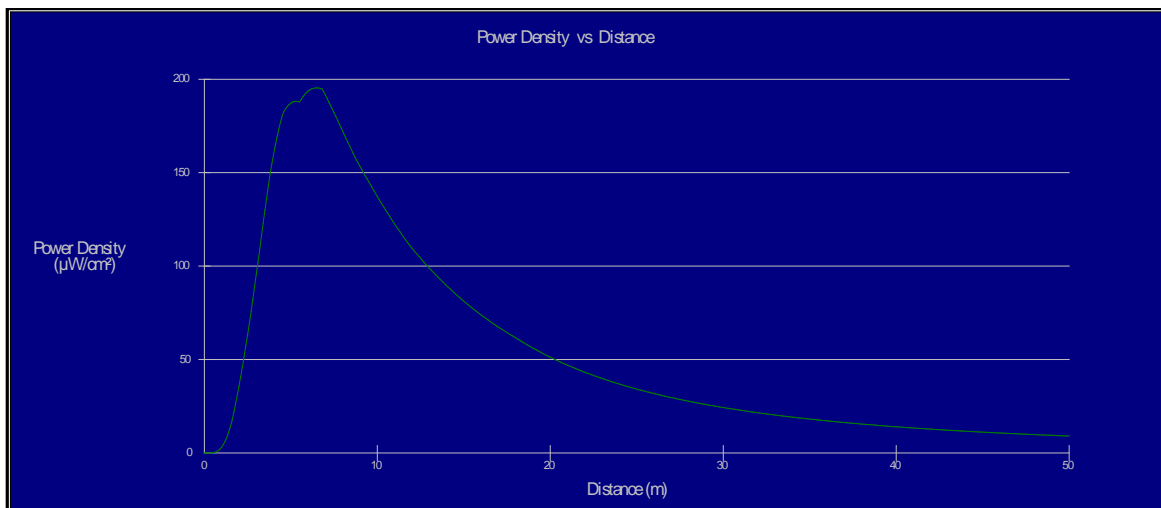
Maximum Value: 195.37 µW/cm^2 at 6.5 meters.

This configuration produces a maximum of 195.37 µW/cm² at a distance of 6.5 meters from the base of the tower at 3.02 meters above ground level. This is less than the allowed 200 microwatts per square centimeter for uncontrolled exposure.

Using this same FM Model program, the maximum power density at 2.0 meters above ground is 112.0 µW/cm² at 8.6 meters from the base of the tower.

In the main lobe of the antenna, the maximum power radiated horizontally outward from the center of radiation of the FM antenna is 0.7 kW (horizontal only polarization).

A basic formula for power density is:

$$S = \frac{(33.4)F^2(ERP)}{R^2}$$

where:

   S   = power density in microwatts/sq.cm

    F   = typical relative field factor in the downward direction (-60 to -90 elevation)

    R   = distance from center or radiation in meters

    ERP   = Effective Radiated Power in watts

Since the full radiation is considered, F = 1. The maximum allowed power density for uncontrolled radiation given in OST Bulletin 65 is 200 µW/cm². Using this value for S and solving for R in this case, the distance to a point in free space where the power density just reaches the 200 µW/cm² value, we get R= 10.8 meters. Farther than this distance away from the center of radiation of the antenna, the power density is less. There are no structures in the main lobe of the antenna within 10.8 meters horizontally of the center of radiation. Figure 2 of this document plots the KLPW STA site relative to buildings in the area.

Figure 2
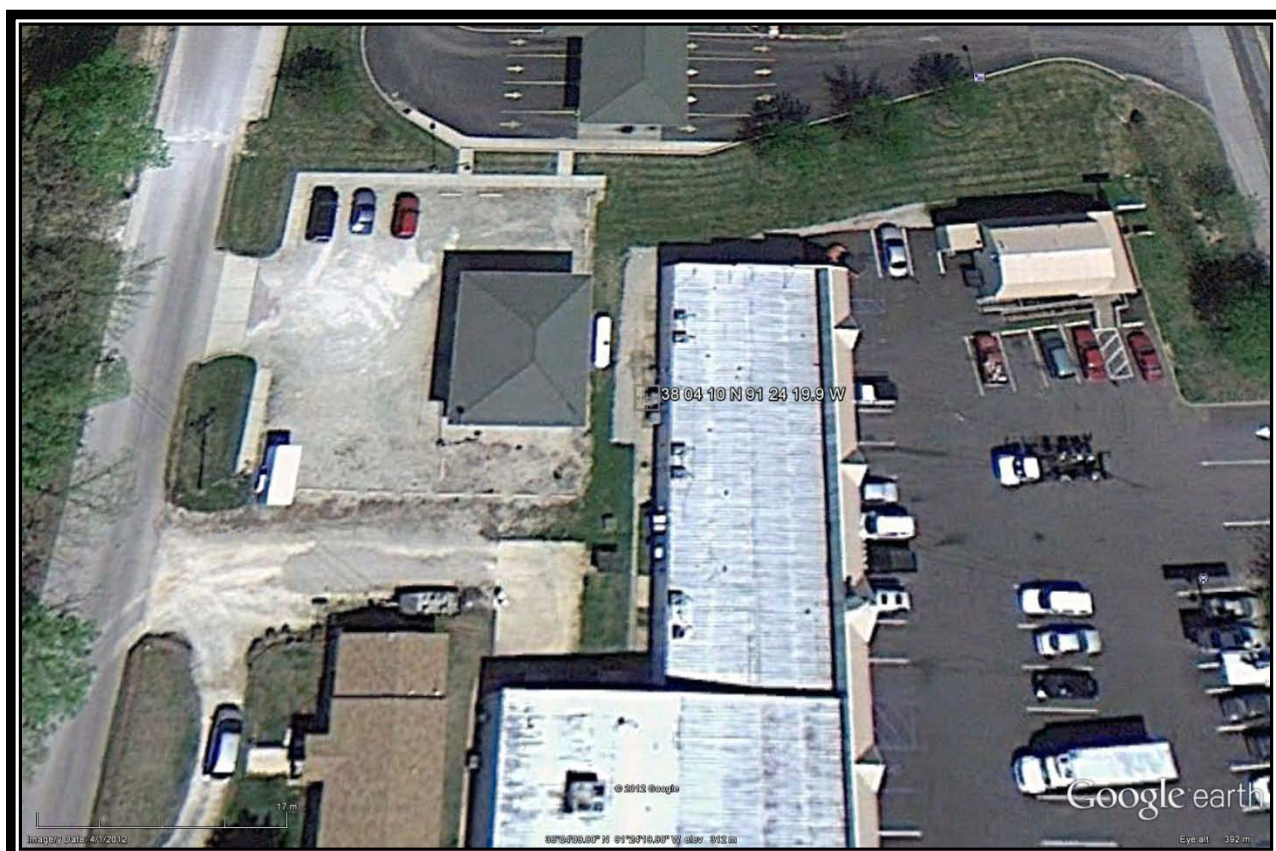
(Tower Site Coordinates in NAD83.)

The existing tower is being slightly increased in height by adding one or more tower sections. The construction is not a source of controversy within the community. The area is properly zoned and is an industrial area. The overall tower height will be 9.14 meters above ground. This temporary tower does not require registration.

The site will be fenced to prevent access to the tower by the general public. The fence and site will be clearly marked with all standard warning and hazard signs. All radiation from this site is below the required protection at all locations available to the general public. The power density level at the metal roof of the nearby building is below the limit required for protection of the general public. Therefore there is no hazard to personnel within the building.

Personnel required to be temporarily near the antenna will be protected by reducing the radiated power to acceptable limits or by turning the radiating system off.

The applicant certifies that it, in coordination with any other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

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This KLPW Special Temporary Authority request has no significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments. Therefore, this proposal is excluded from environmental processing.

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