

## EXHIBIT 22

### Compliance With Environmental Rules

This application is for modification of the licensed auxiliary antenna facilities for KUOR-FM, to increase effective radiated power. No changes are proposed in the station's existing auxiliary antenna system, including the antenna supporting tower.

The proposed KUOR-FM auxiliary antenna would conform with the guidelines set forth in the Commission's "OET Bulletin 65 (Edition 97-01) (August 1997)" concerning exposure to radiofrequency radiation, as demonstrated in this Exhibit.

The antenna system for the proposed KUOR-FM auxiliary antenna is a Collins Radio Co. Model 37M-3 FM Antenna, which is comprised of three horizontally polarized nondirectional radiating elements mounted in a vertical line and spaced one wavelength between elements. The antenna is side-mounted on a tower structure located on the roof of the Hall of Letters building at the University of Redlands. The roof of the building is 18 meters above ground, and the antenna supporting tower extends to an overall height of 12 meters above the roof level. The antenna radiation center is located 8 meters above the roof of the building, with the lowest radiating element of the antenna system at a height of 4.5 meters above the roof level.

For the proposed KUOR-FM auxiliary antenna, the values of electric field strength in the "radiating near-field region" (and into the "radiating far-field region" beyond) of the antenna array were obtained by calculating at the observation point the electric field from each individual radiating element of the array and then obtaining the vector sum of these fields. This method of computation was assumed to be valid for FM broadcast station antenna arrays at points in the space where the distance to the nearest radiating element of the array is at least one-half wavelength. For these calculations, an omnidirectional horizontal radiation pattern was assumed for each antenna element, and the vertical radiation pattern of each antenna element was assumed to be a cosine function modified to provide 15 percent of the horizontal radiation directly below (and also above) the radiating element, where a complete null would otherwise exist. In accordance with the procedures described in "OET Bulletin 65," a value of effective radiated power of 0.29 kW was assumed for the proposed KUOR-FM auxiliary antenna, to take into account the horizontally polarized radiation from the antenna system, and the calculated electric field strength was multiplied by 1.6 to approximate the effect of ground reflection. Plane-wave equivalent power density was then determined from this adjusted electric field strength value.

## EXHIBIT 22 (continued)

### Compliance With Environmental Rules

Computations of the values of adjusted electric field strength in the vicinity of the proposed KUOR-FM auxiliary antenna, based upon the above described computing method, show that power density levels resulting from operation of the proposed auxiliary antenna would not exceed  $0.16 \text{ mW/cm}^2$ , or 80 percent of the Maximum Permissible Exposure value of  $0.2 \text{ mW/cm}^2$  for uncontrolled exposure situations at 89.1 MHz, at any point at a height of 2 meters or less above the roof of the Hall of Letters building, in the vicinity of the base of the antenna tower structure.

The base of the tower structure for the proposed KUOR-FM auxiliary antenna is accessible only through a locked door leading to the roof of the Hall of Letters building, and this prevents unauthorized access to the structure. One or more RF hazard warning signs are posted near the base of the tower structure. In any instance where it becomes necessary for workers to climb the supporting tower, or to remain for extended periods in areas where power density levels may exceed the allowable values, the proposed auxiliary antenna will be operated only at reduced power, or will not be placed in operation at all, as may be required to protect all workers from exposure to hazardous levels of radio-frequency radiation.

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January 2008

Sierra Madre, California