August 2015
New FM Channel 229C3
Waldport, Oregon
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 229C3 (93.7 MHz) with an effective radiated power of 9 kilowatts. Operation is proposed with a 4-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on an existing tower.

The proposed antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

While a 4-bay antenna is planned, the precise make and model have not yet been selected. Calculations of the power density produced by the proposed antenna system therefore assume a Type 1 element pattern, which is the “worst case” element pattern. Under this worst-case assumption, the highest calculated ground level power density occurs at a distance of 6 meters

from the base of the antenna support structure. At this point the power density is calculated to be 390.4 μW/cm². If required by the Commission, the applicant commits to performing post-construction measurements as a condition for licensing.[1]

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

[1] In the alternative, once the antenna model is selected it may be possible at that time to demonstrate compliance by means of updated ground-level power density calculations.