

July 2007
New FM – Channel 217C3
Coos Bay, OR
NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 217C3 (91.3 MHz) with an effective radiated power of 10 kilowatts. Operation is proposed with a 4-element horizontally-polarized omni-directional antenna. The antenna will be side-mounted on the new KMHS(AM) tower being constructed at 50 A Street at Coos Bay, Oregon. The FCC Antenna Structure Registration Number for the tower is 1258231.

NIER Calculations

Study of the area within 1000 meters of the proposed site reveals no other likely sources of non-ionizing radiation. Thus, precise calculations are made only with regard to the levels from this proposal.

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.

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

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.

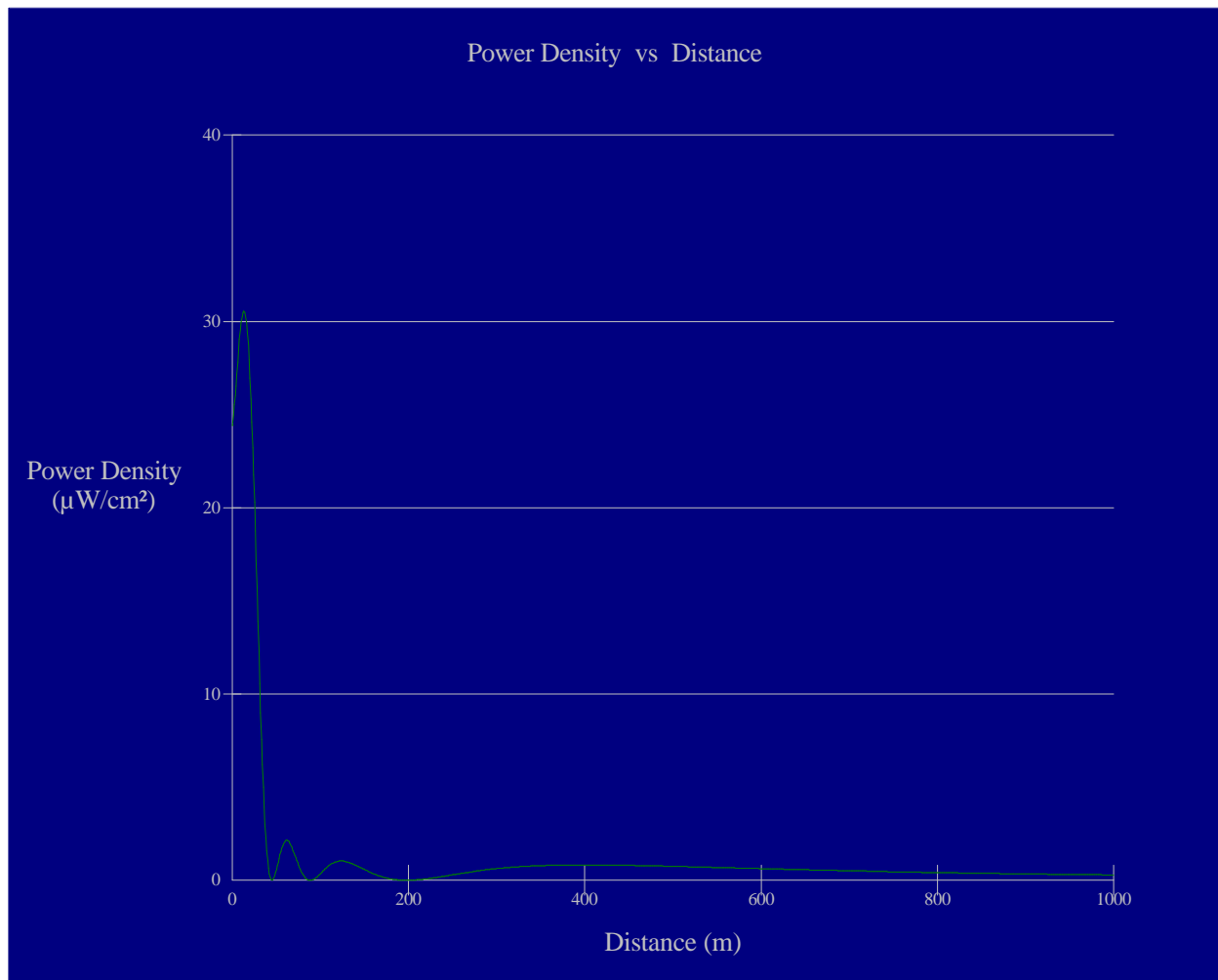
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the element pattern for the Jampro JMHP-4 ring antenna proposed for use. The highest calculated ground level power density occurs at a distance of 13 meters from the base of the antenna support structure. At this point the power density is calculated to be $30.6 \mu\text{W}/\text{cm}^2$, which is 3.1% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 15.3% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

The FM antenna will be installed on the KMHS(AM) 1420 kHz tower authorized by BP-20061212AEH. KMHS is authorized to operate with 1000 Watts nondirectional daytime (41 Watts nondirectional nighttime). The AM radiator will be 98.8 electrical degrees tall, or 27.4% of the station wavelength. Using Tables 1-4 in OET Bulletin No. 65, the fencing distance requirement for KMHS is 1 meter from the tower base. Coos Bay School District is the licensee of KMHS and the proponent of the instant application, and will ensure that the fencing requirement is satisfied.

Public access to the site will be restricted and the antenna tower will be posted with warning signs. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

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 radiation in excess of FCC guidelines.



Ground-Level NIER

OET FMModel

Coos Bay 217C3

Antenna Type: Jampro JMHP-4 "ring"

No. of Elements: 4

Element Spacing: 1

Distance: 1000 meters

Horizontal ERP: 10.0 kW

Vertical ERP: dna

Antenna Height: 53 meters AGL

Maximum Power Density is 30.6 : W/cm² at 13 meters from the antenna structure.

Hatfield & Dawson Consulting Engineers