June 2009
KOMO-FM(FM) Channel 249C
Oakville, WA
NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 249C (97.7 MHz) with a maximum lobe effective radiated power of 63 kilowatts. Operation is proposed with a 6-element circularly-polarized half-wave-spaced directional antenna. The antenna will be side-mounted on an existing tower located atop South Mountain. The FCC Antenna Structure Registration Number for the tower is 1247912.

NIER 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.

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

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.

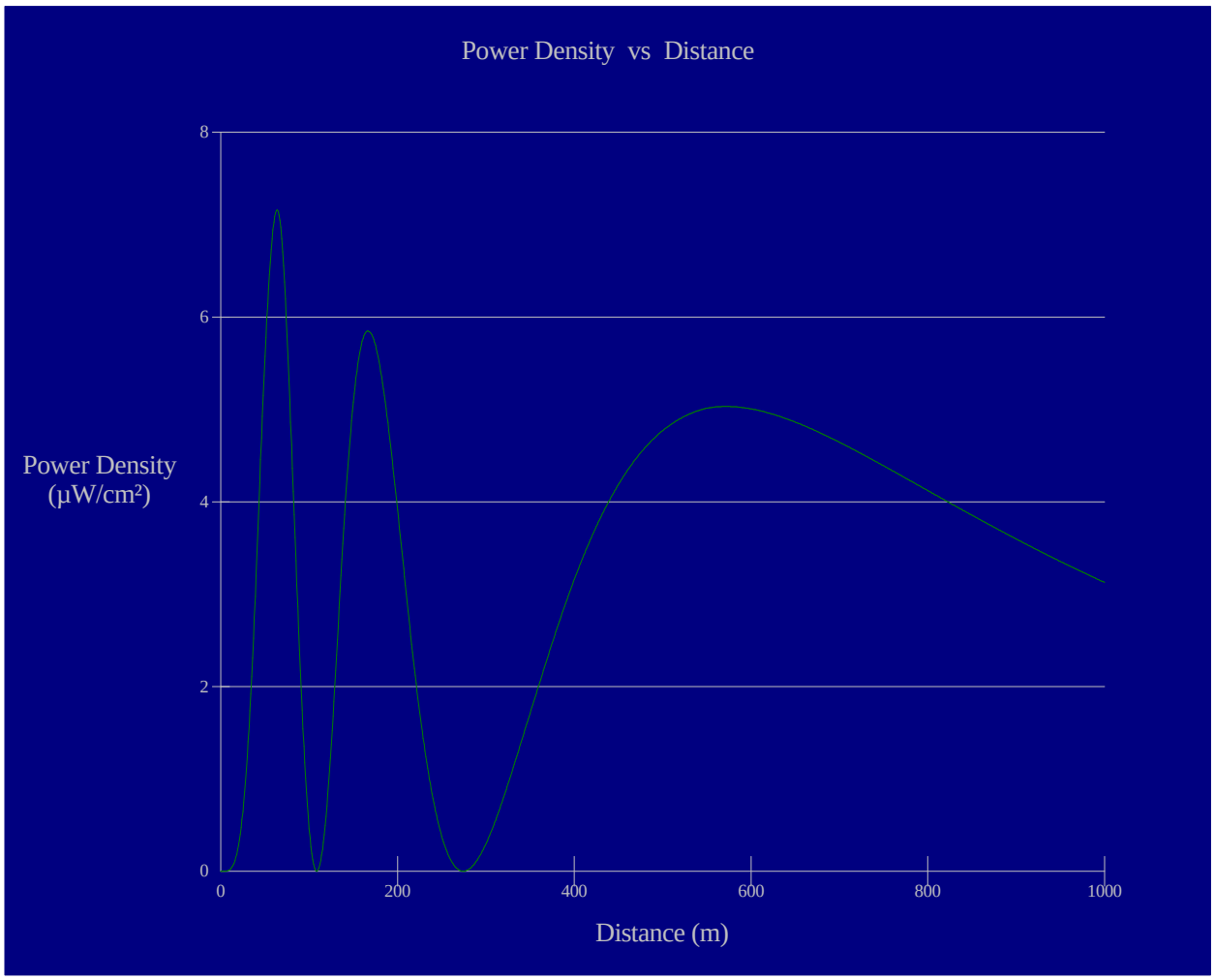
The precise model of antenna to be used for KOMO-FM has not yet been selected. Therefore, calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the “worst case” element pattern for a “ring stub” antenna. Under this assumption, the highest calculated ground level power density occurs at a distance of 64 meters

from the base of the antenna support structure. At this point the power density is calculated to be 7.2 μW/cm², which is 0.7% of 1000 μW/cm^2 (the FCC standard for controlled environments) and 3.6% of 200 μW/cm^2 (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of KOMO-FM alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 et seq and no further analysis of non-ionizing radiation at this site is required in this application.

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**

KOMO-FM 249C Oakville

Antenna Type:	ring-stub assumed for this study
No. of Elements:	6
Element Spacing:	0.5 wavelength
Distance:	1000 meters
Horizontal ERP:	63 kW
Vertical ERP:	63 kW
Antenna Height:	99 meters AGL

Maximum Power Density is 7.2 : W/cm^2 at 64 meters from the antenna structure.