

## Certification

I, Ronald L. Myers, broadcast engineer, hereby certify that I personally supervised installation and testing of the KGNW FM antenna system on Pederson Hill on August 14, 2011, and that after measurements using a calibrated RF meter I find this antenna does not produce non-ionizing radiation in excess of the authorized safe limit for the general public of 200  $\mu\text{W}/\text{cm}^2$ .

The antenna is composed of a single dual polarized element.

The lowest point of the antenna on the 11 meter tall tower is at 7.5 meters above ground level.

Referring to the FCC power density calculator, the estimated power density should not exceed about 63  $\mu\text{W}/\text{cm}^2$ .

To prove this hypothesis, with the transmitter output power at 0.280 kW (SWR of 0), 125 watts ERP, I measured the power density around the base of the tower using a factory calibrated Trifield Alfa Lab RF power meter. On July 8, 2011, I had verified the calibration of this meter against a Narda field strength meter.

First, with the KNGW transmitter switched off, readings were taken of the site to determine power density from existing FM and TV translators on an adjacent tower, about 13 meters away. Power Density did not exceed 0.4 to 7  $\mu\text{W}/\text{cm}^2$  at the base of the other tower, despite wet conditions with rain falling.

Then, with the KNGW FM transmitter on, holding the meter and reception antenna element above head level at about 2 meters above ground level, I crisscrossed through the jagged terrain and foliage near the base of the tower out to a distance of about 15 meters. No readings exceeded 52  $\mu\text{W}/\text{cm}^2$  due to the terrain falling off on three sides, except on the wooden platform south and adjacent to the tower which is used by radio workers (average of 1 meter above ground). Readings while standing on the platform reached 132  $\mu\text{W}/\text{cm}^2$  at a spot some 8 meters from the tower base.

This platform does not belong to the tower owner and permission has not been granted to fence around it or any part of this publicly owned land. However a sign is being posted beside the rickety steps leading onto the platform warning of potential radiation danger. And warning signs are being posted at the base of the tower, on the transmitter building and on the only path to the site through the thick vegetation. (Sign attached).

I would further observe that while this remote site does have electrical power, there is no road, no telephone lines and no internet. Access is only by foot, a 30 minute climb from the nearest road, Engineer's Cutoff, up an adventurous steep winding path (of sorts) hindered by fallen trees and jagged rocks, which is in fact nothing more than a muddy stream bed part of the way. Bears roam the area. A helicopter pad at the site is reserved for use exclusively by technicians of adjacent government communications systems. This remote, nearly inaccessible site is not inviting to the general public, including hikers and hunters, and rarely does anyone venture there except technicians.

In light of the above, I find the KNGW site and antenna system safe and in full conformity with FCC power density limits for the general public. No fencing should be required.

15 August 2011  
Ronald L. Myers