Submitted to: ***NW Health magazine***
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Radiation from Cell Towers

The Web site of the Federal Communications Commission Office of Engineering and Technology includes links to Bulletins that address common questions about communications technologies. OET Bulletin 56, fourth edition, August 1999 (http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf) explains the biological effects and potential hazards of radio frequency with the electromagnetic fields.

Measuring Radio Frequency Fields

Because a radio frequency (RF) electromagnetic field has both electric and magnetic components, it is often convenient to express the intensity of the RF field in terms of units specific for each component. The unit *volts per meter* (V/m) is often used to measure the strength of the electric (E) field, and the unit *amperes per meter* (A/m) is often used to express the strength of the magnetic (M) field.

On page 15 of this bulletin, you will find Table 1:

FCC limits for Maximum Permissible Exposure (MPE)

- **Limits for Occupational/Controlled Exposure (WORKERS)**
  NOTE: the 1500-100,000 (MHz) range. Under Power Density (S) column it says 5mW/cm2 and under the Averaging Time (minutes) column the time is for ONLY 6 MINUTES.

- **Limits for the General Population Exposure (ALL OF US)**
  NOTE: the 1500-100,000 (MHz) range. Under Power Density (S) column it says 1.0mW/cm2 and under the Averaging Time (minutes) column it is for ONLY 30 MINUTES.

The cell tower companies tell the American population that they can expose EVERBODY with 1,000mW/cm2. They forgot to tell us that it should be for ONLY 30 minutes, NOT 24/7.
The fraudulent and misleading power density and intensity levels of the total RF radiating energy from the cell towers and how dangerous they are for our health is what I'm going to explain.

This 1milliwatts/cm2 equals 1000 microwatts/cm2.
This 1milliwatts/cm2 DBm level equals zero (0) DBm.
This 1milliwatts/cm2 has a large voltage level of 633 Millivolts P/P.
This is a very high level compared to the TV and radio radiations.

The cell tower companies asked Congress to allow them to transmit radiations up to 1,000mW/cm2, and to state that you can't prevent an installation of a cell tower due to health reasons. The FCC and Congress agreed.

All applications for cell towers show a very low radiation pattern for ONLY two to four cell phone users. Do you really think that the cell phone companies would spend $100,000 to $200,000 plus paying rent of $700 to $1,000 per month to the landowner for a new tower that

will be used only by four cell phone users? The cell phone radiating levels that are allowed for ONE cell phone channel is 1000mW/cm2. This equals zero (0) DBm, which gives you a voltage level of 633 Millivolts P/P for each channel.

Each cell phone tower can operate 60 to 124 channels on each of the three sectors, modulating with Ident, TDMA, CDMA, and Global System for Mobile. (In my opinion, the GSM is the most dangerous.) When you add two more companies to this new tower with three sectors each, this adds up to 9 sectors radiating 60 to 124 channels.

If you have 60 channels x 3 sectors, this equals 180 channels.
If you have 124 channels x 3 sectors, this equals 372 channels.
If you add one to three more companies, then you can really see that the total radiation will be a very large amount of power. (Just look at the tower, in Lacey WA, at I-5 and College Ave.)

Your personal cell phone transmits from +10 to +27 DBm. The +27 DBm level is .5 watts and Equals a large voltage of 14 Volts P/P. You can't see or feel this voltage level.
I have X-ray pictures that show the radiations from the cell phone radiating three-quarters of the way through your brain. What does 14 volts P/P do to your brain cells that are operating at -60 To -70 Millivolts a thousand times smaller?

The radiations from our Sun reach us at a level of -150 to -155 DBm. The radiations from the Sun have two things that make them unique: the radiations are UN-MODULATED and they are UN-POLARIZED. This means that the Sun radiation doesn't have any modulation signals added to the radiation component and they are not polarized, which means they are randomly coming from every angle. When the Sun's radiation reaches the Earth's ozone layer at 25 miles/40Km above the earth, they heat the ozone layer to a very warm 20 °C = 70 °F.

The U.S. Radio Frequency Spectrum has 420 blocks/channels of man-made radiations. ALL of these transmitted radiating signals are polarized vertical or horizontal and ALL of these radiations have AM or FM modulations added to every signal.

Understanding Radiation Levels that Enter Our Homes

The 400-500 satellites in outer space are transmitting down on us with Right-Hand-Circular radiations. Even after passing through the ozone, the power density level that reaches earth is around -110 DBm. This power density equals 1.98 microvolts/cm2 peak to peak (P/P).

The 400-500 TV and AM and FM radio stations from our state and around the world are reaching our bodies inside out homes at -60 to -80 DBm. The RF radiating levels are compared below.

- 0 DBm = 633 millivolts/cm2 P/P for cell phones (the cell phone voltage level is 1,000 times greater than the others listed below).
- -60 DBm = 630 microvolts/cm2 P/P for radio and TV.

- -80 DBm = 62.2 microvolts/cm2 P/P for radio and TV.
- -110 DBm = 1.9 microvolts/cm2 p/p from the satellites above.

The cell phone companies tell us that the cell towers can have radiations for one channel that can radiate up to 1000mW/cm2. This, of course, is not true when you consider that they operate 24/7. Maybe they have never read the FCC chart?

The 4,000 to 5,000 cell phones in your area each operate at 1800 MHz to 1900 MHz (which is 1.8 Gigahertz to 1.9 Gigahertz). For comparison, your microwave operates at 2.456 Gigahertz, which heats your food by agitating the water molecules so they rub together, producing heat.

Think about adding thousands of cell phones radiating 1.8 Gigahertz into your home 24/7. The bad news is that ALL of this radiating power from each sector adds together in DBm. This a very large amount of radiating power.