

District of Columbia Zoning Commission-Antenna Roundtable

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My name is Neil Feldman. I am an Electrical Engineer. At the beginning of my career I designed FM transceivers and pagers and later graduated to CMOS integrated circuits. I was also General Manager of an FM radio station and a consultant to the founders of WCPN, the Cleveland Public Radio Station. Today I am actively engaged in the broadcast industry as President of a Video Post-Production company with offices in Dallas, Texas and Santa Monica, California.

At your last meeting you heard from representatives of the cellular phone industry but I was surprised to see that there were no representatives from either broadcast television and radio or mobile business communications. I hope you all understand that these are very different industries. They employ quite different approaches in their utilization of the radio spectrum. By design, cellular phone transmissions are at relatively low power and limited coverage, generally less than 2 to 3 miles from the antenna. This is in contrast to commercial television and radio broadcasts or most two-way mobile business communications. Commercial broadcasters utilize high power transmitters with high gain antenna arrays. It is my feeling that this Zoning Commission needs to fully understand and pay close attention to these differences. Even though I work in the broadcast and communications industry I am not here to present their views. I am here to share some information and insight into what should concern this Commission when dealing with extraordinary concentrations of high power omni-directional Electromagnetic Field Radiation (EMF) originating within heavily populated areas.

My 4 major points are:

1. Current FCC, FDA, and OSHA Field Strength safety guidelines are inadequate. You have already learned that current US Standards are significantly higher than in most other countries. It is more disturbing to note that no rigorous studies address the cumulative effects of multiple high power EMF emissions originating from a common point (even if each individually are within legal limits).
2. Monitoring of excess EMF Radiation levels is also inadequate and virtually non-existent. Equipment to properly monitor full safety compliance is rare to find – even for FCC Field Engineers. They have limited resources and interest. I have heard that the FCC may only have two monitoring vans suitably equipped for this kind of surveillance. This suggests an area where I believe this Zoning Commission may exercise some authority. You could develop regulations that

place the burden of proper monitoring squarely on potential tower occupants and/or the tower owners instead of the FCC. You could make them responsible for on-going proof of compliance. You could mandate that their findings be subject to open public review and scrutiny. You could incorporate compliance as a prerequisite to an annual or tri-annual renewal of tenancy on these towers.

3. You need to be aware that there is an ongoing proliferation of new digital television broadcasting transmitters. In fact there is literally a nationwide doubling of all television transmitters already underway. The FCC mandated a quasi-voluntary migration to an all-digital television standard within the next few years. Broadcasters who wish to retain their franchise must now simulcast digital transmissions on a second broadcast channel newly assigned to them. Many of these stations are already on the air, but they are operating at reduced power or on temporary antennas.

However the new digital television transmission standard (called 8VSB) is not working out very well. The broadcasters now know that they are going to lose some market coverage in every metropolitan area. This may even prompt them to seek further increases in Effective Radiated Power (ERP) for their transmissions at some later date. The digital 8VSB TV signal is not easily received indoors and the modulation scheme is quite sensitive to catastrophic interference from multiple reflections in urban or mountainous areas. This fact may require many consumers to put up external TV antennas equipped with rotors to receive all the new digital broadcast channels. Cable TV is not going to be a solution to this problem. The Cable TV industry is highly resistant to carrying the new digital channels. The FCC has also just decided not to try to force them to do so. The result of this and several other unresolved issues --including the high cost to consumers who will ultimately be forced to replace every TV set they own-- is causing the so-called transition to digital TV to proceed extremely slowly. The FCC had at first suggested it might be completed in some markets by 2006 but that date is now considered totally unrealistic. In fact the transition period may go on for a decade or more – especially in light of the current change in economic conditions. The point is that there is likely to be an even greater proliferation of new high power transmitters and antennas into the future.

4. Just a final point of information. Digital television standards are not be confused with High Definition Television (HDTV) formats. HDTV formats are only part of several different digital formats that the broadcasters may or may not choose to transmit. Multiple standard definition (SDTV) channels and/or data transmission may just as likely be offered instead. The FCC has only mandated a transition to all-digital television transmission. There are 36 different choices within that digital broadcast standard. That is simply to say that HDTV broadcasting is not mandated by the FCC, nor is it even likely to be widely offered by the broadcasters for some time to come, if ever.