Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Carrier Current Systems, including Broadband over Power Line Systems	)	ET Docket No. 03-104
	)	
	)	
Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems	)	ET Docket No. 04-37

COMMENTS OF THOMAS A. MCKEE

May 2, 2004

I am retired and a short-wave broadcast radio listener and radio amateur.

Included in this NPR the Commission proposes to: 2) maintain the existing Part 15 emission limits for Access BPL; 3) require that Access BPL devices employ adaptive interference mitigation techniques; 4) require that Access BPL providers maintain a database of installation locations and technical information. My comments on this NPR will mainly address these items, will point out how the NPR falls short of providing meaningful interference protection from Access BPL systems and will propose rules to assure that this protection is provided.

I. Specific Areas of Concern:

1. Because it is not specifically mentioned in the NPR I remind the Commission of it's obligation under the provisions of international telecommunications treaties (which the United States is a signatory) to protect from harmful interference not only FCC licensed operations but also the licensed operation of other countries. Strict attention to this obligation is very important to those of us who utilize the hf spectrum to listen to broadcasts emanating from other countries. With respect to this obligation I believe that it will take additional and more stringent rules than those proposed in the NPR to protect short-wave broadcast listeners from harmful interference emitted by Access BPL systems. In Section III below I will propose suitable rules.

2. I strongly disagree with this statement in paragraph 34: "In this regard, we note that hundreds of kinds of unlicensed devices are successfully operating under the current Part 15 limits without causing harmful interference to licensed operations." It's unfortunate that the Commission is unaware of the real extent of the problems that these devices often create for short-wave listeners and amateur operators. In Section II below I will cover my experience with interference from these devices, the steps I take to minimize the impact of this interference on radio reception, and

how these steps will be completely inadequate to deal with the harmful interference from Access BPL systems.

3. Since Access BPL will be legal under the Part 15 Regulations, and since users of short-wave receivers are entitled to protection from harmful interference from radiation emitted by Part 15 devices, the speed and completeness with which the Access BPL providers provide this protection is very important. The NPR almost completely fails to address rules that will guarantee quick and complete harmful interference elimination by the Access BPL providers. In Section III below I will propose suitable rules.

II. Digital Devices do Cause Harmful Interference:

1. My harmful interference experience with the digital devices is as follows: Because there are no FCC Part 15 limits on the number of frequencies radiated from these devices, I have experienced many instances of harmful interference from the radiation of, computers, cash registers, gas pumps, automobiles, etc. Further, due to the broad spectrum of the radiation from these digital devices the use of frequency agility may not result in avoiding the interference from them as can often be done with interference from older single-frequency, non-digital devices. Often, outside the home, the only way to avoid the harmful interference from these devices to my hand-held radios is to physically move away from them - which is not always practical.

2. In my residence harmful emissions from digital devices is a continual problem particularly toward the upper end of range from 1.7 to 30 MHz. However, so far I have usually been able to arrange things so that harmful interference to radio reception from the digital devices in the home is minimized. This has been possible because most of these devices have a small radiating surface - they are quasi-point sources of interference and/or because they are under my complete control. It takes time and patience to minimize the interference from these devices so that normal use of a short-wave receiver is possible. Sometimes the interference reduction has been accomplished by additional filtering on the device's power cord, sometimes by ferrite devices installed on other device wiring and sometimes by changing the receiver antenna placement. However, often the only solution is to turn the device off during the time I desire to utilize my radio receivers.

3. Now however, comes BPL with it's high potential for the harmful interference to be piped directly into my home's power wiring or radiated into the home from nearby power lines. My past solutions to the interference problems caused by digital devices will be completely inadequate to deal with this new source of harmful interference.

a. I will not be able to use frequency agility to eliminate the harmful interference from PBL, as several of the interfering frequencies will appear within the bandwidth of my receiver over a fairly broad frequency range.

b. I will not be able to physically move away from the interference as it may be radiated from the power wiring all around me, not the quasi-point sources as with the digital devices now in my home.

c. I will not be able to filter out the interference at the source.

d. I will not be able to turn off the source of the interference.

In fact, interference minimization will be almost completely in the hands of the Access BPL provider. Adequate rules are required to assure that the Access BPL Providers do this in a timely and complete manner.

III. Rules Required to Minimize Harmful Interference from Access BPL Systems.

1. Given past experience with digital devices it's clear to me that I will experience harmful interference to my radio reception from BPL if it is implemented in my neighborhood. Since BPL will be legal under the Part 15 Regulations, and since radio receiver users are entitled to protection from harmful interference from radiation emitted by Part 15 devices, the final rules implemented by the Commission must include requirements and procedures that will assure this protection is quickly and completely provided.

2. Short-wave listeners may tune the bands at all hours of the day and night so complaints to the Access BPL provider about harmful interference may come at any time, and may include a list of frequencies which are experiencing harmful interference. Since BPL will be required to have adaptive interference mitigation techniques to allow avoiding harmful interference the time to clear a problem once reported should mandated to be very short.

3. It's good that paragraphs 33 and 38 of the NPR proposes to continue to apply the existing Part 15 emission limits for carrier current systems to Access BPL systems. In light of the experience I have had with the broadband emissions from digital devices any relaxation of the rules would be a mistake.

4. It's good that paragraph 40 of the NPR indicates that the Commission will require BPL devices to employ adaptive interference mitigation techniques. However, the NPR is mute on rules that would assure that these techniques are employed in a complete and timely manner to eliminate cases of harmful interference. Suitable rules are covered in paragraphs 6, 8 and 9 below.

5. It's good that paragraph 42 of the NPR proposes to require that Access BPL devices incorporate a shut-down feature that would deactivate units found to cause harmful interference, and thereby allow speedy implementation. However, the key word here is "allow," and additional rules are needed so that "allow" becomes "assure." Suitable rules are covered in paragraphs 8 and 9 below.

6. The process of reporting interference from BPL is very important and the NPR seems mute on this. The revised Part 15 Rules and Regulations for BPL should mandate that the BPL providers have a dedicated toll-free number for interference complaints, and that this number should be staffed 24/7/365 with the personnel who are at the controls of the system providing the adaptive interference mitigation techniques. The waiting time for this service should be mandated to not exceed 5 minutes. If adequate rules are adopted a typical exchange with this service should go something like this:

Dial 800-xxx-xxxx
(Connected within 1 minute and answered within 4 minutes)
"Hello, BPL Interference Control"
"Hi, I'm in ZIP 27511 and BPL node CA6709. Please notch the 16, 19 and 13 Meter broadcast bands for the next 3 hours."
“That’s ZIP 27511 and BPL node CA6709?”
“That’s right.”
"Just a moment."
(Within 1 minute)
"OK it's done."
"OK, thanks."
Hang up

This process, though quick, must be contrasted to the situation where the interfering digital devices is in the home and can be instantly turned off to avoid the interference.

7. It's good that paragraph 43 of the NPR requires that Access BPL providers maintain a database of installation locations and technical information. However, this database requirement does not go far enough. The revised Part 15 Rules and Regulations for BPL should also mandate that the BPL providers maintain a database of harmful interference complaints received by time, location and frequency during the past 180 days. One use of this data base would be for the Access BPL operator to sift the data to determine the frequencies, locations and times of repetitive complaints so that the Access BPL system's adaptive interference mitigation techniques could automatically notch or turn off the offending equipment to match the complaints and in this way avoid the need for the short-wave listener making some of the calls as outlined in paragraph 6 above. A second use for this database would be in connection with paragraph 9 below.

8. Recognizing the secondary nature of Access BPL the revised Part 15 Rules and regulations for Access BPL should mandate that if a harmful interference complaint cannot be cleared up within 15 minutes the BPL provider shall be required to instantly shut down the Access BPL service's offending equipment for a period of 6 hours. This may seem like a stringent requirement, but its presence will provide a real incentive for the Access BPL providers to make the maximum effort to clear complaints completely and quickly.

9. Again recognizing the secondary nature of Access BPL there is the matter of how much BPL interference is to be tolerated by an individual hf spectrum user before it's clear that the Access BPL system is incapable of being operated in a manner that avoids harmful interference. The

revised Part 15 Rules and Regulations for Access BPL should mandate that if a radio receiver user finds harmful interference to his radio reception on 25 days in a given 30 day period or 75 days in a 90 day period and reports each instance of the harmful interference to the Access BPL provider it shall be considered that the BPL system is incapable of avoiding harmful interference and the Access BPL service's offending equipment shall be required to be permanently turned off. In order to invoke the provisions of this rule the short-wave receiver user must maintain a record of the reported complaints. Of course the Access BPL provider should be required to maintain a database of them as covered in paragraph 7 above.

The intent of these comments has been to: (1) Assure that the Commission recognizes that for the short-wave receiver user digital devices are not as benign as the NPR seems to indicate. (2) Suggest rules to assure that under the provisions of international telecommunications treaties which the United States is a signatory, that the short-wave listener is quickly and adequately protected from harmful interference due to the operation of Access BPL systems.

Respectfully submitted,

Thomas A. McKee