My name is Lyle Johnson. I have been employed professionally in the electronics and electronic communications industries for over 35 years. As an engineer, I have developed wireless data communications systems in use worldwide, in the HF, VHF and UHF spectra. Like many commenters in this proceeding, I am an Amateur radio operator, with an Extra class license. I have been a licensed Amateur operator for more than 39 years.

The original purpose of allowing low data rate "carrier current" communications on power utility wiring was to enable monitoring and control of the power distribution system.

The rise of the Internet over the last decade has spurred great public interest in data connectivity, and at ever-increasing data rates. Current technology allows Internet connection via dial-up phone service, DSL, digital cable and satellite. The power distribution utilities wish to provide Internet access as a legitimate means to bolster their revenue.

As a semi-rural resident, my present options for Internet access are dial-up and satellite. DSL and digital cable are presently unavailable to me. I have rejected satellite, in part due to cost, an din part due to the onerous restrictions placed on such access by the service providers. I currently use dial-up services. I would very much like faster access.

But not BPL.

But BPL is bad engineering practice. In fact, it is terrible engineering practice.

The power transmission and distribution system was designed to efficiently provide multiple kilowatts of low-frequency AC power to a huge number of load points. It has been refined over many decades of experience. It does its intended job well.

It was not designed to carry radio frequency (e.g., "broadband") communications, and as a result it does so poorly. In fact, power lines are reasonably efficient antennas, that is, they radiate this energy. It is for this reason that there are requests before the Commission to increase the level of radiation allowed under the BPL banner. Allowing such increases will help reduce the cost of deploying BPL, the proponents argue, because fewer repeater amplifiers will be required.

But the resulting radiation will be extremely disruptive to communications in the 2-80 MHz frequency range. Hundreds of commenters have pointed the Commissioners to the ARRL video that demonstrates how terrible this interference is. It is inconceivable that the Commissioners will not have viewed this material during this comment period.

There is no argument that deploying BPL will be costly. While the transmission wires themselves may be used, amplifiers, bridges, end-user equipment and so forth must be manufactured and deployed.

I suggest that power companies can provide cost-effective, broadband Internet access in a way that poses no interference problems. It may even cost less than BPL, and offers immensely improved bandwidth and capability. It is being demonstrated today to be cost-effective in rural areas and would thus be even more so in urban areas where BPL would be competing with already entrenched DSL and digital cable services.

The method I am suggesting is fiber optic.

I refer the Commission to this website:

http://www.cis.washington.edu/projects/broadband/washington.asp

and for a particular example, to the system being deployed in Grant County

http://www.gcpud.org/zipp/providers.htm

called Zipp. This system is already providing high-speed Internet and other digital services, by the power utility companies, using the power utility infrastructure, in a rural setting.

I believe this technology offers a better solution than BPL, allows the power distribution utilities to provide high-speed data services, and is good engineering practice. In fact, it is excellent engineering practice.

If BPL must be allowed or encouraged, I suggest the radiation limits from 2-30 and 50-54 MHz be reduced by a factor of at least 100 from levels permitted today.

I also suggest the BPL services have their baseband waveform shaped in such a way that the majority of energy be concentrated in the 0.5-1.7 MHz, 30-50 MHz and 55-135 MHz areas. If the interference to existing services is as mild as the BPL proponents claim, they will embrace this proposal because it offers even more bandwidth than the 2-80 MHz range, does not concentrate energy in areas where long-range propagation is likely to occur (commonly called HF, from 3 to 30 MHz) and is not in areas of spectrum that are traditionally set aside for weak-signal operation.

I am confident that the Commission, after reviewing all comments, seriously considering the disruptive interference issues, recognizing the susceptibility of BPL to the thousands of licensed radiators that are immersed in the power gird, and examining the alternatives such as those referenced above, will realize that BPL for Internet access is a seductive siren song, epitomizing bad engineering practice and terrible public policy.

Respectfully submitted,

Lyle Johnson