

Before the Federal Communications Commission
Washington, D.C.

In re BPL (broadband over power lines):

ET Docket 03-104

Comments of James C. McLaughlin on his behalf and on
the behalf of other rural residents

Background:

Consideration is being given by the FCC to modify Part 15 regulations to allow and to facilitate the transmission of HF electrical signals on electric power line wires. This proposed scheme is called BPL.

The putative purpose of BPL is to provide an additional means for houses to connect to the internet, or the like, and to provide an additional source of revenue to companies supplying electrical energy.

The comments herein are directed to the foreseeable consequences of the implementation of BPL on rural residents. It is expected that ample comments shall be received concerning other expected consequences.

Technical considerations:

In order for BPL to be profitable, BPL must be able to transmit the equivalent of many internet connections each having a competitively high bit rate. Modern, efficient, and good communication practice would accomplish this by spreading the signal power used over a wide bandwidth. It is expected that a spectral analysis (using a reasonable bandwidth) of a commercially viable BPL signal will show an essentially uniform power density (watts per Hz) from low RF to something like 50 MHz. Were one to listen to a commercially viable BPL signal with a radio receiver, one would hear a noise-like signal.

In other words, all knowledgeable engineers would expect a commercially viable BPL signal to extend at least through the HF range and to appear noise-like.

As all observers know, the rural, electrical energy distribution system (outside plant) comprises separated wires on poles. To the greatest extent possible, the wires run for long distances that amount to several wavelengths to many wavelengths at HF. (HF extends from 3 MHz (100 meter wavelength) to 30 MHz (10 meter wavelength).)

When electrical signals are present on wires that are long in terms of wavelengths, EM (electromagnetic) radiation is inevitable. Inevitable radiation of radio waves is not too strong a characterization. All reasonable engineers know that commercially viable BPL signals will be launched as EM (radio) waves.

Because of the noise-like character of BPL signals, the unintendedly launched, but inevitable, radio waves will be perceived by radio receivers as a rise in background noise level. This will lead to an inevitable reduction in signal to noise levels.

Contention:

The inevitable, if unintended, rise in radio noise levels that will be caused by BPL is not acceptable to users of HF.

Some of those to be afflicted by BPL:

FCC licensed radio amateurs will be adversely affected by BPL. The likely destruction of their service by BPL is covered by other commentators.

Federally (non FCC) licensed radio services such as FEMA, FCC, MARS, and the military services make extensive use of HF in the national interest. They, unlike radio amateurs, might have the expensive option to overcome BPL noise by increasing power levels. No doubt other commentators will cover the incompatibility between BPL and these vital services.

There is another group of HF users where the presence of BPL raises 1st Amendment issues. At a time in the Republic's history when the means for filtering and distributing information are increasingly concentrated in a few hands, the use of radio receivers to listen to short wave broadcasts provides the means to hear alternative views. The views of Canada, UK, Australia and many others are available to the short wave listener. So are alternative views from within the U.S. from FCC licensed short wave broadcasters. The advent of BPL will tend to close an important source of information that is not filtered by the major information providers and that leaves no paper-trail.

Conclusion:

The FCC is urged to reject any changes to Part 15 that facilitates BPL. Further radio noise pollution is not in the public interest. Sanctioning such pollution may amount to a 5th Amendment taking.

Sincerely,

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