

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

In the Matter of Amendment of Part 15
Regarding New Requirements and
Measurement Guidelines for Access
Broadband Over Powerline Systems

ET Docket No. 04-37

By W. Lee McVey, P.E.,

To: The Commission

**MOTION REQUESTING AN EXTENSION OF TIME FOR RE-ISSUANCE OF
PROPOSED RULES AND DATA REQUESTS**

Purpose and Introduction

1. This Motion is filed to request an extension of time to permit necessary additions to and re-issuance of proposed rules to include necessary and specific requirements on BPL operators and utility host companies, when not the same entity, to ensure that BPL equipment will have sufficient means to adaptively control output levels in the event of power line reconfiguration. Specifically, where such reconfiguration, by physically lengthening or shortening distance between BPL repeater nodes by line switching, turn-on or turn-off of switched capacitor banks, voltage regulators, or booster transformers.

2. And, to further justify and substantiate claims that BPL systems would be capable of benefiting National or Homeland Security by being able to control, gather data or communicate to and from utility system equipment during an electrical outage and to identify BPL systems using a means detectable using analog AM and FM communications receivers.

3. Also, this Motion is filed to request the addition of radial zones free of BPL operation surrounding fixed-service, licensed radio stations in light of measured interference observations by the National Telecommunications and Information Administration Phase 1 Study.¹

4. This Motion is in response to the first Order Granting Extension of Time by the Chief, Office of Engineering and Technology, released May 27, 2004, which partially granted a previous Motion for an Extension of Time in this proceeding. Neither the Motion nor the resulting Order addressed the above issues. And, as of this writing, the NTIA Phase 2 report has not been issued, and the additional time allotted for the consideration of this report should be extended. Extended to compensate for it not being available by the date indicated in Order Granting Extension of Time and for incorporation of any relevant findings in proposed rules.

Background and Specifics

5. By merely stating in the proposed rule that operators include means of adaptive

¹ National Telecommunications and Information Administration (NTIA) entitled *Potential Interference from Broadband over Power Line (BPL) Systems to Federal Government Radio Communications at 1.7 - 80 MHz - Phase I Study*. April 27, 2004, Section 6.62.

control, there is not sufficient specificity to require means to automatically adjust levels or signal routing, when power system reconfiguration occurs. Reconfiguration is commonplace, and can occur without planning to restore power to faulted sections from other sources, and can be random, occurring at any time, based upon voltage or power factor requirements of the power system.

6. In my comments to the NOI² I included these concerns together with an explanation as to the effects of attenuation or augmentation of BPL signals which will occur from switching or reconfiguring of lines and line apparatus. To simply state that BPL systems must employ means to limit levels to those that will not interfere is insufficient to address changes to power line configuration.

7. Means must be employed to monitor and control levels independent of human intervention, since utility operators, and especially when they are not also the BPL system operators, will be concerned primarily with proper power system operation. During operational crises and outages, utility control operators will be concerned with power system restoration and very likely unaware of the effects of their changes in configuration on BPL signal levels or routing. Levels that may, in fact, have been established to not interfere can and will suddenly change by reconfiguration and may far exceed even levels that previously existed causing interference complaints in the first place.

8. Shunt-connected capacitor banks, for example, will appear as faults to high frequency signals, in that they are connected line to line and have considerable capacitance to

² My Comments to NOI 03-104 at 14.

ground as well. Levels adjusted for satisfactory BPL propagation will soar, when such distribution line capacitors are routinely switched off-line.

9. Further, it is patently ludicrous to assume that BPL systems offer any improvements to either Homeland or National Security in purported secure control applications to the power system itself. BPL devices will depend upon the availability of utility power in order to convey information. And, even if backup power were available, utility overcurrent protection and switching systems, which are mostly 3 phase, are designed to physically separate all of the continuous, energized conductor paths necessary for two way communication to occur. Thus, BPL equipment could not be depended upon for power system control or data if power is not available due to the interruption of the line conductor path. Existing utility control media are separate and distinct or are physical path-redundant where not, to ensure communications and resultant data and control are available especially during a power outage. While it is true that in-service operational data such as system voltage, load and customer meter data could be obtained using BPL, the suggestion that important, secure control or outage restoration could be obtained to restore power via BPL is a clear and distinct distortion of BPL capabilities.

10. A requirement should have been included in the NPRM for the utility industry to show how that BPL systems would be capable of offering any communication during power system outages or after transfer of portions of distribution line sections corrupting the normal BPL signal path for power system control purposes. Existing, widely commonplace power utility control media include radio packet modem technology, telephone leased-line drops to field equipment, and where available, power utility-owned

fiber optic cables. All of these media contain back up or separately derived DC power sources which are capable of riding through hours, if not days of power system outages, if necessary, and do not rely upon power system continuity to function. Distribution line switches and line circuit breakers have stored-energy operating mechanisms which enable multiple opening and closing operations without power available and are designed to be controlled by firm control and communication paths to ensure operability during a power outage to restore power when called upon to do so.

11. A requirement should have been included in the proposed rules directing a means of BPL system identification that could be detected using a conventional AM or FM analog receiver system so that victims of interference could promptly identify the entity causing the interference and its 24-hour, 7-day-basis contact information. Either recorded voice or Morse Code at a speed of 20 words per minute or slower should be employed across the entire bandwidth of the BPL signal at time intervals not exceeding once every 10 minutes so that any licensed stations interfered with could quickly identify the source of the interference and initiate contact with operators of the offending system(s) to alleviate the problem or cease operation, if necessary.

12. The proposed rules should also include BPL exclusion zones surrounding fixed, licensed service sites and medical facilities to prevent what could be catastrophic, unplanned consequences of BPL interference, whether conducted or radiated. Facilities such as hospitals, medical treatment centers, 30-50MHz public safety radio receiving sites and all HF aircraft communication facilities, at minimum. In addition, any fixed station, in any licensed service which may become involved in public

safety or homeland security operations should be considered for inclusion in such BPL-free zones. Based on NTIA Phase 1 measurements, a BPL-free zone should be greater than 700 Meters from fixed HF sites to avoid at least doubling interference-based noise from BPL system operation at Part 15 permitted levels.³

Statement of My Experience and Qualifications

13. The data and opinions expressed above are largely based upon over 29 years of my professional experience as an Electrical Engineer in power utility and industrial power systems. Experience that includes distribution system planning and design, system operation and management. It is also based upon my pre-professional experience as a radio technician and broadcast engineer, having held a First Class Radiotelephone license since 1966. I am a Registered Professional Electrical Engineer in the states of California and Florida and am a Senior Member of the Institute of Electrical and Electronic Engineers and have both Bachelors and Masters Degrees in Electrical Engineering.

Respectfully Submitted,

/s/

W. Lee McVey, P.E.

1301 86th Court, NW
Bradenton, FL. 34209-9309
GROL License PG-12-19879

June 3, 2004
1300HRS EDT

³ National Telecommunications and Information Administration (NTIA) entitled *Potential Interference from Broadband over Power Line (BPL) Systems to Federal Government Radio Communications at 1.7 - 80 MHz - Phase I Study*. April 27, 2004, Section 6.62.

