

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the matter of

Inquiry regarding Carrier
Current Systems, including
Power Line Broadband Systems

ET Docket No. 03-104

August 20, 2003

To: The Commission

REPLY COMMENTS of ZONE INNOVATIONS

Introduction

The writer Walt Evanyk, is an experienced Broadband Engineer with over 30 years in Telecom, Domestic and International cable plant design, RF, Broadband Networks, Medical Imaging, Defense Electronics, EWCM, EMI, EMC, Wireless IC design and Homeland Security. Also has served on many International Standards Committees such as OFDM, 802.xxx, ATM, T1E1, Frame Relay, OSIG, DAVIC and has over forty patents. Mr. Evanyk serves on several corporate technology and patent review boards.

Reply comments to American Public Power Association.

APPA's stated goal of advancing the affordable deployment of broadband services in rural and underserved areas is admirable. Very similar to a proposal for an Informational Highway to Congress by two great men of vision using a new technology so superior that all prior limitations were addressed thus supposedly being able to accomplish coast to coast communications. Every city, farm, rural, urban area and business would be freely linked together in an ubiquitous network. The needs of government and the military would be served because the system would be robust and impenetrable thus not able to cause any interference. This new medium would be free of interruptions and rural areas would no longer be disadvantaged. The social needs of the nation would be met. Sound familiar, Hiram Alden and James Eddy made these testimonies to the 33rd Congress in 1853. The technology required a dedicated right of way across the nation. Cost was to be 2.7 million dollars and they wanted special preferences since it was an emerging technology (insulated wire versus bare wire). It is important to note this was seven years before the Pony Express.

Here we are a century and a half later still having the same words, aligned with apple pie and motherhood. There wasn't then and isn't today a single technology that can provide such a goal. There are still areas within our borders that can not afford a television or

electrical power. These gentlemen, even if one agrees the concept was good experienced social, political and technology shortcomings.

BPL has potential is a safe statement when not having to clarify the term potential with real facts and the results of impartial testing.

One can always claim a test or trial deployment proves a technology can do provide a service or perform a task. The true evaluation is in the real world, real environment along side of other mediums, within the same parameters, and to be able perform as in this case as a transparent operation.

It is incredulous APPC has a different view as to who should have the burden of demonstrating the potential of interference. Sound engineering practices alone place this responsibility squarely on the BPL crusade. Regardless, it clearly now has been demonstrated by those challenged by APPC and the BPL supporters that there are significant interference issues by measurements at every trial and test site. Additionally, let us not forget the fact, that other countries have experienced these supposedly non existent interference scenarios and removed or are in the process of removing BPL. It is amazing the laws of Physics remain.

It doesn't matter whether these facts were known, not known, avoided, or not consider important. What does matter is creating flexible (new rules) to support a new technology approach while others have had no problem would place us on track for a major train wreck.

It is my firm belief that the best modulation and system approach for BPL is OFDM. Because of it's spectral efficacy, noise immunity, Quality of Service (QoS) tools and Digital Signal Processing (DPS). Thus there would be no need to increase the power limits and in fact BPL should have a much lower power limit due to the inherent gains of signal to noise and bit error rates OFDM offers.

Reply comments to Alliance for Public Technology.

APT's comments of the potential of BPL are very general and as stated are based not on any technical foundation. I agree though all broadband providers with legitimate sound technology must operate under the same rules. Many of which seem to penalize cable versus Telco.

Part 15 must be applied and not modified for a new technology. BPL must perform the same type leakage requirements of their local drops (plant) (adjusted for 1-80MHZ) by truck roll monitoring and be held responsible for leakages, interferences and fines.

Based on for the most part the demonstrated past inadequate or inability of the utilities to address interferences to licensed services there must be formal incentives from the FCC for the utilities abide by the rules and regulations such as penalties for non conformance.

Having the utilities self monitor within their circle could expedite a train wreck. This past east coast power grid failure happened even with advance warnings. Their track record

has been less than stellar in many areas including solving or addressing current interference issues to licensed services without BPL in the fray.

Reply comments to Ambient Corporation.

Ambient clearly states with overhead power lines a portion of the signal will be radiated. This radiation will increase at each and every impedance discontinuity.

If anyone drives around such a neighborhood the results are noticeable with an AM broadcast radio tuned off a station. Thus is even without BPL present.

Reply comments to GE Medical Systems.

I concur. This type of interference has a real potential of affecting medical imaging equipment. Some of my designs in CAT, MRI and Ultrasound imaging had to be evaluated against these scenarios.

Reply comments to Southern LINC, Southern Telecom, Southern Company.

Southern states that commercial development of BPL would greatly benefit from removal of regulatory uncertainty along with suggested recommendations of relaxing test.

Southern seems state emissions of the plant should be measured but the real areas of possible problems are the RF devices on individual lines.

In all the comments by the BPL supporters and utilities there are several threads of inconsistencies and split within. One being: Will the aerial lines in the neighborhood radiate. Southern and others seem to not be of an understanding of a need think system versus component. The entire technology must be understood and how functional elements (FE) interplay.

There now exist concrete evidence both nationally and internationally of unacceptable radiation and interference from the aerial lines and the nodes within any BPL existing deployment.

Even Edison was on the wrong track pushing DC as a power medium. He did not understand the economics, complexities and consumer equipment of transmitting DC versus AC over long distances. In other words a system approach.

Southern suggest BPL can reduce truck rolls, pinpoint outages, save time and make recommendations of equipment or supplies required to accomplish repair.

These tools and techniques are available now without BPL. One wonders why Southern has not taken advantage of these tools. The focus seems to be on mitigation (spin) versus remediation.

In Conclusion

One must consider all factors in evaluating a new technology approach. A term Schnaars used is “Zeitgeist” the condition that characterizes the technological darling of the day universally applied to intellectual, political, and social trends of an era. By implication the zeitgeist idea holds that the forecasters are imprisoned by the spirit of the times in which we live. Simply stated it means to be carried away by the technological spirit of the day.

Careful consideration is suggested as to the rails being contemplated to be laid and the speed of the building of the track.

There is more than adequate evidence that BPL has severe radiation and even perhaps conducted emissions from independent tests, and International halted deployments of BPL. A warning flag waves very strongly that BPL proponents have either not been able to measure these events or even more alarming have not recognized the need. One can not simply say “Well they the other countries do not have the same technology solutions and expertise we have”.

The Rules should not be relaxed, but in fact probably tightened (for BPL) until BPL proponents can demonstrate (not in a conference room) to the FCC and independent third parties there is a need to do so and there are no interference issues. BPL deployment must have the full responsibility of eliminating any interference. This should not be a problem since the majority claim there will be no interferences.

In addition, BPL users, experimental licenses and trials must adhere to the same principles of the other broadband providers. Routine plant leakage, radiation emission drive bys and reports must be issued to the FCC and made public.

Supported by past historical data the majority of utility companies inactions the FCC should offer incentives for compliance in the form of severe penalties and fines for unresolved interferences to any licensed service.

We all want to avoid another train wreck.

Walt Evanyk
August 20, 2003