

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC. 20554**

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

To: The Commission

Thank you for the opportunity to reply to comments submitted by Progress Energy. Progress Energy has defined the heart of the interference issue between BPL and the Amateur Radio service on page 8 of their May 3, 2004 filing as follows:

As Progress Energy continues Phase 2 of its BPL pilot, we have received several complaints of alleged "harmful interference" from amateur radio operators ('hams'). The term "harmful interference" is defined in the FCC's rules as interference that seriously degrades or repeatedly interrupts another user's transmission. With regard to the hams, it appears that they consider any interference to be harmful. It also appears that those that have submitted complaints about Progress Energy's BPL system intentionally seek out interference using very sophisticated and sensitive equipment. This leads to four factors Progress Energy believes the FCC should consider when addressing the issue of "harmful interference". First, the interference should have to occur in the normal course of the complainant's operations, rather than be the result of the complainant seeking out the interference. Secondly, the interference should have to be more than momentary. That is, for example, if driving another 30 yards will virtually eliminate the interference, then it is not harmful. Thirdly, the interference should have to be proven to so greatly interfere with operations such that communications are practically unintelligible. Finally, the sensitivity of the measuring equipment must be standardized.

Source:

http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516182999

It is refreshing to finally hear a BPL provider admit to what science, common sense and thousands of commenters have concluded from the beginning of this rulemaking process, that BPL signals do radiate and cause interference. Unfortunately, the prospect of negotiating a level of "acceptable" interference between BPL providers and the Amateur Radio service is subjective and onerous. In the end, the standards the Commission sets for "harmful interference" with respect to the Amateur Radio service will determine the future of Amateur Radio.

“With regard to the hams, it appears that they consider any interference to be harmful”

Progress Energy is quite correct in stating that Amateur Radio operators consider any level of interference harmful. As an example, suppose that you have just spent several thousand dollars on a new HDTV and are receiving on-air broadcasts with beautiful picture quality. Soon after your TV is set up and working properly, interference occurs that causes a small degree of snow on the strongest channels and makes the weakest channels much more difficult or impossible to watch. Even though the stronger signals are still viewable, the degradation in quality would be considered harmful interference.

Amateur radio is quite similar. Amateur radio operators often spend thousands of dollars and countless hours upgrading their stations so that the signals transmitted and received are of the best possible quality. Operators seek to enhance the reception of weak signals as much as possible. Though a strong signal may be received through BPL interference, the degradation of signal quality caused by the BPL transmission is harmful interference. The masking of weak signals by BPL transmission is obviously harmful interference.

“It also appears that those that have submitted complaints about Progress Energy’s BPL system intentionally seek out interference using very sophisticated and sensitive equipment”

Listening for weak signals is what Amateur Radio operators do. As stated above, many Amateur Radio operators spend thousands of dollars on sensitive receivers and the highest gain antennas they can afford to increase their ability to receive weak signals.

Many hams are interested in very low power (QRP) or weak signal communication and comb the bands listening for any signals that can be heard. Often these signals are either in or just marginally above the noise floor. Even with higher power, propagation may be such that the signal being received is at or near the noise level. These circumstances are common, and ANY additional interference will preclude the ability to receive the signal. Therefore, any level of interference in frequencies allocated to the Amateur Radio service is harmful.

Part of routine Amateur Radio practice is to tune through frequencies listening for signals. Between signals exists noise. The noise itself communicates to the Amateur Radio operator the absence of signals. If the noise were obscured by BPL transmissions, the Amateur Radio operator would be unable to determine the presence or absence of weak signals and therefore experience harmful interference.

BPL signals themselves are very unpleasant to listen to. Most hams will not be willing to listen through the sounds that BPL signals generate in an Amateur Radio receiver for any length of time. Again, this is harmful interference.

This leads to four factors Progress Energy believes the FCC should consider when addressing the issue of “harmful interference”. First, the interference should have to occur in the normal course of the complainant’s operations, rather than be the result of the complainant seeking out the interference.

As explained above, tuning through frequencies allocated to the Amateur Radio service to listen for weak signals is absolutely part of the normal course of Amateur Radio operation. To suggest otherwise clarifies Progress Energies’ lack of practical understanding of the Amateur Radio service. Even weak interference is very evident and is received as part of normal Amateur Radio operation.

Progress Energy believes that Amateur Radio operators are not being interfered with unless they find the interference. The reality is that Amateur Radio operators are going to find the interference, not because they are seeking it out but because tuning through spectrum allocated to them as the primary user is fundamental to the operation of an Amateur Radio station.

Secondly, the interference should have to be more than momentary. That is, for example, if driving another 30 yards will virtually eliminate the interference, then it is not harmful.

Progress Energy apparently believes that all mobile operations are conducted while the vehicle is actually in motion. This assumption is invalid. Mobile Amateur Radio stations often make contacts while parked, or may pull off the road to complete a contact. If the mobile station receives interference from BPL, obviously it is harmful.

Thirdly, the interference should have to be proven to so greatly interfere with operations such that communications are practically unintelligible.

As addressed above with the HDTV example, ANY interference is harmful. Even very low levels of interference will preclude the ability to copy weak signals and degrade the quality of strong ones. It will obscure the noise so that the presence of weak signals can not be determined. The inability to hear weak signals will inevitably lead to situations where the Amateur Station will transmit on what is believed to be a clear frequency, thus causing additional harmful interference to another station that is also operating on the same frequency but masked beneath the BPL interference.

Finally, the sensitivity of the measuring equipment must be standardized.

I understand that the harmful interference caused by the Progress Energy test site was received using a standard “off the shelf” transceiver. Amateur Radio equipment is very sensitive and efforts are continually made to increase sensitivity.

One of the basis and purposes of Amateur Radio is to advance the radio art. Establishing a standard or “floor” under which interference is acceptable precludes the incentive to seek ways to enhance sensitivity and advance the radio art.

Conclusion

Honorable Commissioners, how you define harmful interference to the Amateur Radio service will determine Amateur Radio’s future. The reality is that most Amateur Radio operators will not be willing to listen through “computer hash”, even at low levels, for any length of time. Permitting interference at any level will lead to the end of Amateur Radio in the HF spectrum.

As you know, the Amateur Radio service is unpaid. Amateur Radio operators invest their own time and money to set up and operate their stations. The countless hours of uncompensated labor invested in preparing the thousands of comments on these proceedings alone reflects the deep passion, care and commitment Amateur Radio operators hold for the service.

The only compensation Amateur Radio operators receive is the enjoyment afforded to them in the operation of their stations. In return, Amateur Radio provides an emergency communications system that needs no infrastructure or physical connection between stations. In addition, the Amateur Radio service enhances international good will, the radio art, skills in both the communication and technical phases of the art and provides a means of expanding the reservoir

of trained operators, technicians and electronic experts. BPL interference will eliminate all these benefits provided by the Amateur Radio service.

If the Commission intends to maintain the viability of the Amateur Radio service, then interference must not be allowed. Please do not permit interference at any level from BPL in frequencies allocated to the Amateur Radio Service.

Thank you for your consideration in this matter.

Sincerely,

G. Scott Davis
Extra Class Amateur Radio Operator – N3FJP