

Dear FCC,

I have been a licensed Amateur Radio operator for 32 years, and have been involved in disaster communications for most of that time. As a licensed user of the spectrum mentioned in this proceeding, I have some concerns about the deployment of Access BPL.

I am not opposed to Access BPL per se, nor am I opposed to power companies having another business opportunity. If Access BPL can be implemented in such a manner that it does not cause harmful interference, then I have no problem with it. If Part 15 power limits and rules about interference to licensed services are enforced in a reasonable amount of time, then there should be no problem.

My concern is that the exact opposite will happen. Some power companies and Access BPL equipment providers are moving very quickly to implement these systems, and in the process may select systems that have not been thoroughly tested and are not flexible enough to avoid interference to licensed services. Once thousands of dollars of equipment have been purchased, they will be very reluctant to change to better hardware. If this is the case, in some areas one of two conflicts will ultimately happen:

- (a) some licensed users will effectively shut down BPL systems, because there will be no spectrum available that can be used for BPL without causing harmful interference to licensed users.
- (b) some BPL providers may be more concerned about shutting down hundreds of paying customers than they will be about protecting licensed users, and as a result will refuse to stop the interference. This will force the licensed user to spend their time and money seeking enforcement of rules to gain access to spectrum they already can rightfully use.

It is my opinion that the current Access BPL hardware is not easily capable of sharing spectrum with other users. This is because the very nature of the signals are not compatible with the incumbent users of the spectrum. It may eventually be found that some systems are better than others in this regard, but I believe that insufficient testing has been done to date to make such a determination.

I have been observing with great interest the progress of BPL trials taking place in the state of North Carolina. The results so far have been mixed - some good, some bad, but still incomplete. I would hesitate to reach a final conclusion based on what is known so far.

#### Spectrum Sharing

The Amateur Radio service has a long history of sharing spectrum with other users of the radio spectrum. Indeed, most of our spectrum does not consist of exclusive worldwide allocations; we are primary or secondary users of most of our bands; sharing with government and fixed services, among others. We are able to do this because the signals from the other services have three characteristics that make spectrum sharing easy:

- (a) temporary duration, (b) narrow-bandwidth, and (c) easily identifiable.

Signals of temporary duration are not a problem for spectrum sharing,

because even if other methods of avoiding interference fail, they will eventually go away. Intermittent users of the spectrum often use the "listen before transmitting" protocol to determine if a frequency is in use.

Signals of narrow-bandwidth can be avoided by adjusting up or down in frequency. The non-channelized nature of the Amateur Radio Service makes this fairly easy.

Signals that are easily identifiable make it easier to determine who has primary or secondary status on that frequency, and allows us to contact those spectrum users that are causing harmful (but perhaps unintentional) interference.

Access BPL, on the other hand, has the opposite characteristics: (a) continuous duration, (b) broad-bandwidth, and (c) not easily identifiable.

Access BPL signals will be present 24 hours a day. The continuous duration of the BPL signal means that nearby users of that spectrum will find that range of frequencies unusable or less usable; and the BPL signal will never go away without some effort by the BPL provider. Since BPL systems demonstrated to date do not "listen" part of the time, it will not know what spectrum is in use, and does not adapt automatically.

The broad bandwidth signal cannot simply be avoided by adjusting up or down in frequency - the BPL signal is several Megahertz wide, and may completely cover an entire Amateur band. Therefore, the small frequency adjustments possible with narrowband interference will do no good in avoiding BPL interference.

The fact that BPL signals are not easily identifiable also presents a problem. With power lines located in all directions near many homes, it will not always be easy to determine where the harmful interference is coming from. Those suffering interference may not know who to contact (or may even assume Access BPL is the cause, even when it is not). To the Commission's credit, the Access BPL database will make this somewhat easier once identification has been made, but I believe it will not always be easy to be certain that interference is caused by Access BPL or some other system.

Access BPL systems are currently advertised as being able to "notch" frequencies where interference is being caused. This may make it possible for those systems to avoid harmful interference to fixed-frequency and channelized services, but it is not compatible with the Amateur Radio Service, which is not channelized, and tends to use higher frequency bands during daytime hours and lower frequency bands during nighttime hours. Depending on the particular activity of interest, an Amateur Radio operator may operate on a single frequency or may scan up and down the band looking for signals from other stations.

Mobile stations make up a significant part of the Amateur service, and in fact much of the public service communications we provides depends on them.

In other words, we are more frequency-agile and geographically

distributed than users of most radio services because the nature of our radio communications requires us to. This is going to be difficult to accomodate simply by notching individual frequencies.

#### Closing Remarks

I would feel more comfortable with Access BPL if more testing of the various systems had been completed. Certainly, it will eventually be found that some BPL systems cause less interference than others. I'd like for testing to reveal specifically which systems are better before BPL providers spend thousands of dollars implementing those systems which generate the worst interference.

The National Telecommunications and Information Administration (NTIA) has just released the first phase of its BPL study (NTIA Report 04-413). This report suggests, among other things, that current FCC Part 15 measurement techniques may significantly underestimate peak BPL field strength. However, the study also suggests it's possible to accommodate BPL technology while managing the interference risk, but much of this may not be known until Phase 2 of the study is completed. Phase 2 will evaluate the effectiveness of the Phase 1 recommendations and address potential interference of ionospheric propagation of BPL.

My final concern is how disputes regarding harmful interference will be resolved. If a licensed user complains of harmful interference, and the Access BPL provider reaches a contrary conclusion, they may ultimately reach a standoff where the Access BPL provider refuses to take any further action (this has recently happened during one BPL trial, and has yet to be resolved). With the continuous broadband signal used by BPL, this may effectively shut down the licensed user for weeks until a lengthy and perhaps expensive enforcement action can be taken. If this is the case, how vigorously will the Commission enforce the requirement that Part 15 users not cause harmful interference to licensed services? How much of the burden of proof will be placed on the licensed user? For a voluntary noncommercial radio service such as the Amateur Radio Service, an expensive or time-consuming burden of proof will not be practical for many licensees; many of them simply cannot afford it.

I therefore urge the Commission to do three things:

1. Encourage further testing of various BPL systems before reaching a final conclusion on how Access BPL should be regulated. It may be found that some methods are superior to others when it comes to avoiding interference.
2. Allow NTIA to complete Phase 2 of their BPL study before adopting changes proposed in this NPRM, and
3. Clarify how much of a burden of proof will be required of the licensed user complaining of harmful interference from Access BPL, and how quickly interference should be resolved.

Thank you for your consideration.

John Covington