

SUMMARY: The NPRM proposals to protect licensed services do not sufficiently address the passive users of the HF spectrum and do not go far enough to preserve a worldwide shared resource that I believe is going to suffer from a 'tragedy of the commons' if BPL is widely deployed and is not carefully managed.

The existing part 15 rules and the NPRM proposals are inadequate to address the deployment of many thousands of low-power RF transmitters connected to miles of wire that are indeterminately radiating in a portion of the radio spectrum where propagation over hundreds of miles and around the world is commonly experienced by stations running very low power.

My specific concerns are for the amateur radio service and for the passive users of the HF radio spectrum. I have extensive professional and amateur radio experience in a wide variety of active and passive HF radio operations. I have been a FCC licensed general radiotelephone operator for 37 years. I am also a FCC licensed amateur radio operator with the call sign WAØHQQ. I hold the highest class of amateur license available, the amateur extra class, and have been licensed for over 40 years.

FIELD STRENGTH MEASUREMENTS: I suggest that additional field strength limits for unintentional radiator's emissions in the 1.705-30MHz band be specified in 47CFR15.109 and that they be at least 30 db or more lower than those specified in 47CFR15.223 and 47CFR15.209 for intentional radiators. In addition, measurements for the frequency range 1.705-30 MHz, done at the proposed 30 meter distance, are unrealistic for most residential users because receiving antennas are usually much closer than 30 meters from a power line, its customer service drops, and/or inside power wiring.

IN-SITU MEASUREMENTS: I suggest that in-situ measurements of each operating neighborhood by the BPL operator should be required, prior to BPL deployment, and that identical post-installation measurements be made in order to prove that BPL is not detrimentally affecting the local radio spectrum environment. These measurements should be periodically repeated and compared historically to ensure good long-term stewardship of the BPL system and of the radio spectrum. All measurements should be subject to audit with severe penalties for noncompliance and/or lack of attention to spectrum degradation.

TECHNICAL FLAWS: BPL introduces large numbers of low-power RF signals into existing power delivery infrastructures that were never designed to support HF signal transmission. As proposed, it poses an unacceptable risk of causing interference to licensed radio services such as military, homeland defense, police, public safety, amateur radio and to passive users of the HF spectrum. BPL is, at its core, designed to move RF energy through a power grid by application of low-power transmitters to sections of power transmission line which, unavoidably, become radiators. I believe that electric distribution operators are unlikely to possess the technical expertise necessary to effectively deploy, maintain and troubleshoot BPL technology for some time to come, risking increased unintentional interference until they acquire them.

UNINFORMED CONSUMERS: Potential consumers are probably going to be unaware that their BPL service could be terminated if it interferes with licensed operations. I suggest adding a requirement that consumers sign a disclosure agreement that they understand and are subject to degradation or termination of BPL service without notice if such interference occurs.

ECONOMIC RISKS: As ratepayers, consumers are often not aware of the risks or potential impacts to their electric rates if investments in BPL technology do not deliver expected revenues. Will all electric ratepayers be required to subsidize BPL whether or not they subscribe to BPL service?

INTERFERENCE MITIGATION: The proposed interference mitigation methods and measurement limits are not nearly aggressive enough. I submit that the BPL operators should react immediately and positively to interference complaints and provide a technically competent fully staffed operations center that is reachable 24 hours per day by toll-free telephone number. The BPL operators should be capable

of ceasing operation immediately within the area of the complainant. The BPL operators should be required to provide effective power line filtering to prevent their broadband signals from entering the premises of any consumer who does not wish to receive such signals via the power line. I believe that only the threat of very severe economic penalties will cause the BPL operators to resolve interference in an expeditious manner.

PASSIVE HF SPECTRUM USE: The impact on the activities of US government surveillance operations and of thousands of shortwave listeners has not been sufficiently investigated, documented, or considered. The carefully crafted small 'demonstration' efforts to-date have not begun to illustrate the effect that swarms of low-power transmitters would likely have in creating a 'radio fog' that could blanket the HF spectrum and prevent the reception of all but the most powerful transmitters. Is "freedom of speech" really intended to be only for those who talk the loudest? I am not in favor of deploying a technology that would likely prevent US citizens from listening to other points of view broadcast by 'jamming' shortwave radio frequencies and deny citizens their right to listen to the free speech of others.

BAD OPERATING PROCEDURE: The proposal that a BPL operator would 'listen' for the transmissions of a licensed transmitter and then cause an appropriate 'notch' to be made in the spectrum runs counter to established good operating practice as codified in 47CFR80.92, 47CFR90.403 and other regulations and operating practices. This proposed mitigation technique forces a station to transmit, possibly interfering with a distant station that they cannot hear, in order to cause any interfering BPL system to cease operation on that frequency before they can determine if the frequency is or is not in use by others.

THERE ARE SUPERIOR ALTERNATIVES: Broadband wireless access technology is rapidly becoming ubiquitous in public gathering places and inside private residences. Recent technological improvements have shown that it is easily capable of bridging the gap between a neighborhood service provider and a consumer's residence, providing a reasonable alternative to BPL without risk to existing spectrum users.

BPL IS UNLIKELY AS A RURAL BROADBAND SOLUTION: BPL is touted as a solution to the problem of a lack of broadband options for rural users. But because the technology needs regeneration equipment every few thousand feet, the cost per rural user is likely to be high in any reasonable economic benefit analysis. Cable TV usually fails the same analysis for the same reasons. Emerging broadband wireless technologies such as 802.11 WiFi or WiMAX broadband systems covering tens of square miles seem to better offer a rural solution without the risk for causing widespread interference to existing spectrum users.

MANY URBAN AND SUBURBAN CONSUMER OPTIONS ARE ALREADY AVAILABLE: BPL seems to be most economically suited for urban and suburban environments, where the potential for interference to current users of the HF spectrum is highest, and where any 'cease and desist' interference mitigation efforts would affect the largest number of consumers. Several other wired and wireless technologies are already in wide service and are providing many options to the urban and suburban consumer for broadband service, including land line telephony (dial-up and broadband), cable TV (broadband), Satellite (broadband), Cellular (dial-up), and several localized broadband distribution methods.

EXISTING BPL SYSTEMS MUST COMPLY: All existing BPL systems should be made to come into compliance with the final regulations in the shortest possible time, but no longer than 1 year from the effective date of the regulations. "Grandfathered" operation to a lesser standard should not be tolerated.

In my opinion, the BPL system is technically flawed, is economically risky, itself represents a danger to national security and is not the best available technical option for delivery of broadband to rural areas. If deployed, it must maintain the environment in which it operates as good as or better than it found it.