Reply to Comments by UPLC, July 7, 2003
Proceeding 03-104, Broadband over Power Line (BPL)

UPLC assertions that "Access BPL systems do not intentionally emit radio frequency energy...and...are appropriately classified as an unintentional radiator..." strain credibility. In their effects on present users of the HF radio spectrum, these systems effectively constitute wideband jamming transmitters which will have a devastating impact, especially on weak-signal work, which constitutes a significant portion of present day HF communications overall. BPL proponents know very well that injecting broadband RF energy into unbalanced, overhead metallic conductors constitutes an RF transmitter system and that RF radiation *will* take place. They take the position that 'low level' radiation will not cause interference to licensed users of the HF radio spectrum. This is demonstrably not true, as recent field measurements by the American Radio Relay League amply show. Quite the contrary, even the supposedly low level radiation from test installations meeting present Part 15 limits is easily shown to cause significant impairment to HF communications. It goes without saying that if moderately strong received signals are effectively jammed, weak-signal work is totally impossible. It cannot be overemphasized how significant a portion of HF communications take place with weak receive signal levels, approaching the low, naturally occurring background noise level.

Once BPL becomes widespread, a large number of present day users of the HF spectrum will effectively be evicted from the airwaves. There is no possible way they can coexist with the jamming produced by BPL systems. Virtually overnight, their valuable and expensive radio communications equipment will be rendered obsolete and useless, worth scarcely more than scrap value. Virtually overnight, their ability to assist authorities during major natural disasters, during which they are sometimes the only group retaining communication abilities, will be diminished, and will gradually wither on the vine. This is a real, valuable, field-proven capability which, if destroyed, may never be reconstituted.

The claims by UPLC
that no reports of interference have been received are simply the result of conducting a test program quietly and with little fanfare, and most importantly by not more actively soliciting the input of present HF spectrum users including radio amateurs and other licensed communicators. It is entirely possible that emissions from test installations actually do cause interference to HF spectrum users, but that no reports resulted because those affected did not know how to identify the source of the interference since these are new forms of RF modulation not previously encountered. Complainants generally try to have complete and accurate information prior to contacting FCC for enforcement relief, as correctly identifying sources is essential in order to get any meaningful intervention and remediation. Certainly the recent field measurements by ARRL deserve a closer look. They demonstrate disruption of HF communications capabilities over large areas in the vicinity of presently running test BPL installations. Even this single series of measurements convincingly gives the lie to UPLC inferences that no harmful interference to licensed users is being

caused. Indeed, a careful reading of the UPLC filing reveals that the only claim actually being made is that no *reports* of interference have been received. While these claims may be accurate as far as they go, they cannot in any way be rationally interpreted to prove that interference categorically is not caused. Experienced HF communicators already know from long experience that these BPL installations, in obedience to the laws of physics, categorically *must* behave as radiators, whether considered "intentional" or not. Field measurments using radio communications equipment amply demonstrate just how devastating and massive a disruption of communications can be expected. The ARRL field measurements clearly call into question UPLC's claims of non-interference. This issue deserves a fresh and unbiased second look.

There are already requests by a formative BPL industry to relax Part 15 emission limits, and these pressures will only further escalate over time. Higher BPL power levels would then further decimate any remaining users of the HF spectrum. Roll out of this BPL system nationwide will eventually displace vast numbers of HF spectrum users overall, including government, industry, and amateur communicators, and short wave listeners. There is no possible alternative spectrum to relocate displaced users to, as only the HF spectrum can support long distance communications via ionospheric skip, a simple, low-tech means of communication used by millions for over a century now.

BPL would irretrievably pollute the HF spectrum, rendering it essentially useless for radio communications. It should be kept in mind that hundreds of thousands of milliwatt transmitter systems would combine via ionospheric skip propagation to bring massive interference even to areas not wired for BPL. In addition to howls of protest from displaced HF communicators in the US, it is entirely possible that protests will lodged against the US by foreign governments, as radio propagation by ionospheric skip pays no attention to national borders. It is significant to note that other countries such as Japan and Germany have decided to sharply restrict BPL or ban it outright, this despite pressure from a well-orgainzed BPL business lobby worldwide.

Broadband internet over cable TV coax,
by contrast, has proven itself to be a good neighbor to other users of the radio spectrum. "Last mile" broadband internet via coaxial cable and possibly even fiber optic cable have more promising and less contentious futures than BPL which might, in the end, please no one at all including investors and end users.

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