Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, DC. 20554

In the Matter of	**)**	
	)	
Inquiry Regarding Carrier	**)**	**ET Docket No. 03-104**
Current Systems, including	**)**	
Power Line Broadband Systems	**)**	
	)	

To: The Commission

ADDITIONAL REPLY COMMENTS of Nickolaus E. Leggett
N3NL Amateur Radio Operator to the Comments Submitted by the American Radio Relay League, Inc. (ARRL)

The following is a set of reply comments from Nickolaus E. Leggett, an amateur radio operator (Extra Class licensee – call sign N3NL), inventor (U.S. Patents # 3,280,929 and 3,280,930 and one electronics invention patent application pending), and a certified electronics technician (ISCET and NARTE). I also have a Master of Arts degree in Political Science from the Johns Hopkins University (May 1970).

These comments are an additional reply to the comments submitted by the American Radio Relay League, Incorporated (ARRL). These comments discuss the additional factor of the widespread electric power blackout that occurred in the United States and Canada on August 14, 2003. This blackout stimulates major policy questions that should be considered in this docket.

The Basic Blackout Issue

This electric power blackout, which has impacted approximately 50 million electricity users in two nations, suggests that the electric power industry should focus its attention on its basic activity of delivering reliable electric power. This is not a good

time for the electric power industry to be getting involved with and distracted by the new extra activity of establishing BPL.

The Commission must examine the potential negative impact of BPL on the basic reliability of the nation's fundamental electric power system. The public interest is not served if BPL reduces that reliability. I am requesting that the Commission include this consideration in its technical evaluations of BPL.

The Electric Power Blackout and the ARRL

The ARRL in its comments has pointed out that the Broadband over Power Line (BPL) technology is vulnerable to interference from licensed radio stations, such as amateur radio stations. In addition, the ARRL has demonstrated that BPL operation will cause intense radio frequency interference to licensed users of the high frequency (short-wave) spectrum.

If the electric power industry establishes BPL systems, and these systems use BPL to control power lines, interference from licensed radio stations could cause shut downs of electric power service and blackouts. Some of these blackouts would be local and others could be larger in scope. These situations would cause damages to the electricity users (especially for blackouts happening in the winter). In addition, these blackouts would quickly lead to the shut down of the licensed radio stations by the upset electricity consumers. The consumers would have no tolerance at all for any licensed radio transmitting station that shuts down their electric power. In some circumstances vigilante-style direct actions will be taken to shut down the offending radio stations. The Commission needs to seriously consider these social impacts of BPL-induced blackouts.

Also, saboteurs and terrorists could use radio frequencies to command the shut-down of BPL-controlled power lines. More advanced terrorists could use intense radio sources to actually disable the BPL-based command and control structure.

In addition, the widespread establishment of BPL service will cause most amateur radio operators to discontinue high-frequency (short-wave) operation due to the intense BPL impulse noise. As a result of this, robust amateur radio short-wave networks will no longer be available to assist in large-scale emergencies such as the August 14th blackout or in more conventional situations such as hurricanes and earthquakes.

Recommended Actions

The Commission should engage the interested parties in Commission-supervised research studies and public experiments to explore the following questions about BPL and the reliability of the electric power supply:

1. Susceptibility of BPL systems to interference from licensed radio transmitters and unlicensed Part 15 products
2. Interference to licensed radio services and Part 15 products from BPL operation
3. Shutdown of electric power service due to interference to BPL-based power line control systems
4. Protection of power-line control systems from terrorist interference and from physical damage from terrorist Electromagnetic Pulse (EMP) or high power microwave (HPM) attacks
5. Potential mitigation of BPL noise and vulnerability by using buried power lines in shielded conduit

6. Impacts of special BPL components (such as transformer bypass components) on the reliability of electric power service

All parties should be invited to participate in these experiments and they should be allowed to bring their own measuring equipment with them.

Social Science Aspects

To date, the Commission has not adequately included social science aspects in its decision making. This lack can be corrected by recruiting social science participants to provide input into key rule-making dockets. It is not enough to merely consider legal, engineering, and economics inputs. The Commission needs to formally include social and political scientists in its proceedings. Staff members with these backgrounds should be added as well.

Social scientists can provide useful inputs on the consequences of policy decisions such as the consequences of BPL interference scenarios.

Respectfully submitted,

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August 15, 2003

Statement of Service

A copy of this reply comment has been sent to the American Radio Relay League (ARRL) by USPS First Class Mail.

Mr. Christopher D. Imlay
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14356 Cape May Road
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A copy has also been sent to the ARRL by electronic means.