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November 22, 2005

Director General, Spectrum Engineering Branch
Industry Canada,
300 Slater Street,
Ottawa, ON K1A 0C8

**Subject: Response to Canada Gazette Notice SMSE-005-05 dated July 19, 2005
Consultation Paper on
Broadband over Power Line (BPL) Communications Systems**

Dear Sir:

GENERAL

The Nortown Amateur Radio Club (Nortown) wishes to comment on the document referred to above. Industry Canada's decisions on the matter of BPL can have a severe impact on the ability of licensed and authorized radio users to receive and communicate on MF, HF and VHF spectrum, and in particular, on the future of the Amateur Radio Service.

Nortown represents over 70 active licensed amateur radio operators in the Greater Toronto Area, all of whom are involved in radio communications for personal enjoyment, as well as for the benefit of the general community. The Club has been in operation since 1948 and is ready to provide communications during local, national and international emergencies, where, as we have seen in the past, other means of communication have so often failed.

Having reviewed Industry Canada's Paper and other available literature on the subject, we believe that the introduction of BPL in conjunction with the proposed emission limits, will create harmful interference to authorized and legitimate users of the radio spectrum. In its current state of development, it is our position that wide-area BPL will have a devastating effect on radio users in the frequency range of 2 to 80 MHz and beyond, and will deprive them of the legitimate use of this part of the spectrum.

NORTOWN RESPONSE

The following sections follow the numbering in Canada Gazette notice SMSE-005-05:

3. General Description of BPL Systems

Nortown has no comment on this section of the report.

6.0 Discussion and Proposals

The Department also seeks comment on any other specific issue or concern relating to the Department's role in the deployment and regulation of BPL systems in general.

It is Nortown's position that the amateur radio service is a significant resource to the local, national and international community, particularly in times of emergency. During major disasters such as the Katrina storm, the Asian Tsunami, and the Okanagan fires, amateur radio via MF, HF and VHF networks has often been the only communication available during and within days after such disasters. BPL systems, in their present form, have the capability of interfering with or totally preventing radio operations. It is our view that the Department has a substantial obligation to preserve the ability of amateur radio systems to continue operation without harmful interference.

6.1 Equipment Standard and Approval Process

Nortown agrees that a technical standard is required for BPL equipment and BPL operating systems. However, because power-lines are not designed for efficient transfer of Broad-Band signals, it is essential that the installed BPL system be made compliant with a system standard that does not create harmful interference to other licensed or authorized users of the spectrum.

6.2 Prospective Technical Requirements

6.2 (a) Emission Limits

Access BPL systems operating below 30 MHz will be subject to following proposed limits:

Frequency (MHz)	Field strength (microvolts/metre)	Measurement Distance (metres)
1.705-30.0	30	30

Access BPL systems operating above 30 MHz will be subject to the following proposed limits:

Frequency (MHz)	Field strength (microvolts/metre)	Measurement Distance (metres)
30-80	90	10

The Department seeks comment on the above limits and their suitability for Access BPL systems in Canada. Please provide technical rationale.

Nortown believes that the above proposed emission limits for BPL systems will create significant harmful interference to typical MF/HF/VHF signals that are being received by amateur radio operators whose stations are adjacent to BPL-carrying power lines. In our view, emission limits should be 40 dB lower than those that are proposed, or 0.3 uV/meter at 30 meters.

Most Amateur Radio stations are located within 30 m of a LV or MV power line. A dipole antenna located near a BPL power line (often at a distance less than 30 m) will intercept an interfering BPL signal that is substantially greater than the typical weak-signal received from a distant station. The proposed emission level of 30 uv/m would block all reception except for very strong signals, which are not at all typical.

6.2 (b) Interference Mitigation Requirements for Access BPL Systems

In addition to establishing appropriate emission limits, the Department is proposing that Access BPL equipment/systems incorporate adaptive interference mitigation techniques to minimize the potential for interference to radio communication users. These include:

- *remote controllable shut-down features;*
- *remote power reduction; and,*
- *notch filtering and/or frequency avoidance.*

The Department seeks comment on whether:

- (1) Access BPL equipment should incorporate adaptive interference mitigation techniques as described above; and,
- (2) additional or alternative interference mitigation techniques, if any, should be used to minimize the potential for interference to authorized services.

Please provide rationale

It is Nortown's view that all three techniques should be employed, particularly within the amateur radio bands, for the reasons given in section 6.2 (a) above.

The Department seeks comment on any additional technical requirements for access BPL system. Please provide supporting technical rationale.

Nortown has no comment on this section of the report.

6.3 Operational Requirements

6.3 (a) Prohibited Frequency Bands

The Department is proposing to prohibit Access BPL systems from operating within specific frequency bands including bands used for aeronautical services, public safety and national defense. The Department believes that this approach is necessary to ensure the protection of safety-related services.

The Department seeks comment on:

- (1) the suitability of the above approach to protect safety-related services;
- (2) what other approaches, if any, should be taken to protect safety-related radiocommunications; and
- (3) what bands, if any, should be excluded from use by Access BPL systems.

Please provide rationale.

It is Nortown's position that in times of national or local emergencies and national disasters, amateur radio is a community resource, and should be protected. There are parts of the MF/HF/low VHF spectrum, such as 30 to 50 MHz, where BPL would least affect amateur users. It is recommended that the Department judiciously choose frequency bands to be excluded, and promote BPL in those segments least likely to affect licensed users.

6.3 (b) Geographical Frequency Restrictions and Coordination Requirements

The Department seeks comment on:
(1) What specific geographic locations, if any, should Access BPL systems be prohibited from operating?
(2) As opposed to total ban, should Access BPL systems be able to operate in these locations if specific frequencies were avoided?
(3) What procedure, if any, should be used to facilitate coordination between BPL operators and specific authorized users?
Please provide rationale.

- (1) Nortown has no comment on this section of the report..
- (2) Operation of BPL would be acceptable only if the amateur radio bands were avoided.
- (3) The Department must prepare regulations and protocols that require BPL operators to communicate with, and respond immediately to, spectrum users filing interference complaints. There should be a National, publicly accessible data-base, available over the Internet, listing all BPL interference complaints and showing whether they have been resolved to the satisfaction of the complainants.

6.3 (c) Interference Resolution

The Department seeks comments on:
(1) its proposal that individuals and organizations refer problems to BPL operators to investigate and resolve matters on a timely basis; and
(2) what other approaches could be taken to ensure the resolution of interference complaints?
Please provide rationale.

- (1) If the BPL operator is to be the first point of contact, the Department's regulations and protocols should include specific time-frames for both the response to a notification of interference and for the action to resolve the interference.
- (2) If the BPL operator does not resolve an interference problem in a timely manner, the Department should then intervene, and require the operator to comply or to shut down. . Nortown recommends that there be a National, publicly accessible data-base, available over the Internet, listing all BPL interference complaints and showing whether the complaints have been resolved to the satisfaction of the complainants.

The Department seeks comment on the establishment of a publicly accessible database and its potential to ensure the timely resolution of interference complaints. In particular:
(1) What specific information should be included in the database?
(2) How could the information be accessed and who should have access to the database?
(3) Who should develop, maintain and manage the database?
Please provide rationale.

The USA experience, as reported by ARRL, is that web sites maintained by BPL operators are not readily available to affected parties, or to the public, and that usage is restricted. Nortown recommends, therefore, such a website be maintained by the Department.

Conclusion

Radio amateurs are not against BPL deployment per se, and do recognize that BPL may benefit some Canadians who do not now have access to broadband cable or DSL. However, numerous BPL interference problems have been experienced to date, by radio amateurs in many other jurisdictions. Nortown strongly believes that it is incumbent upon the Department to regulate BPL equipment and

systems to minimize interference to all HF radio services caused by these unconventional, non-radio telecommunications systems.

Submitted by:

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On behalf of

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