
Spectrum Management

Radio Systems Policy

Policy Guidelines for the Use of Broadcasting Spectrum for Local Transmission of Multiple Broadcast Signals

Related Documents

BPR-3 Application Procedures and Rules for FM Broadcasting Undertakings

BPR-4 Broadcast Procedures and Rules for TV Broadcasting Undertakings

1. Intent

The purpose of this radio systems policy is to contribute to the extension of broadcast services into underserved areas by specifying certain technical conditions under which the point-to-point carriage of broadcasting signals using broadcasting spectrum will be authorized resulting in the issue of a technical construction and operating certificate by the Minister for such broadcasting undertakings. Applicants for such undertakings are reminded that under the Broadcasting Act, the Canadian Radio-television Telecommunications Commission must also license any such broadcasting undertakings before operation can begin. A complete specification of the technical and administrative requirements governing the establishment and certification of low-power television and FM broadcasting stations is specified in Broadcast Procedures and Rules.

2. Introduction

The Department has been reviewing the use of broadcasting spectrum for fixed point-to-point relays for the carriage of broadcasting signals with the objective of authorizing such use under a set of guidelines. This was first proposed in a paper entitled: "Use of Broadcasting Spectrum Allocations for Fixed Relays in Support of Broadcasting Operations" which was released for public comment in a notice in the Canada Gazette, Part I on December 8, 1979. This document contains extracts from the final document entitled "The use of broadcasting spectrum for multichannel local delivery and point-to-point relay purposes" which was notified in the Canada Gazette, January 8, 1983.

3. Policy Statement For Multi-channel Broadcasting

3.1 Low Power Television

As specified under the provisions of Broadcast Procedures and Rules, the effective radiated power (ERP) in any direction shall not exceed the value required to establish the Grade B contour at 12 km when the transmitting antenna height is 30 metres, i.e., channels 2-6 ERP 50 watts, channels 7-13 ERP 400 watts, and channels 14-69 ERP 5000 watts.

In addition, the use of second, and in special cases, first adjacent channels for UHF and first adjacent channels for VHF systems will be required for spectrum conservation reasons where a contiguous block of unused channels is available. Co-siting of equally powered transmitters for such systems will also be required in order to maximize the use of spectrum while ensuring reasonable system quality.

As far as the question of protection is concerned, channel assignments for multi-channel, off-air, broadcast transmission systems will be made in all instances on the basis of a Priority 2 or 3 level of interference protection as specified in Appendix 1.

Finally, with regard to the number of UHF and VHF channels assigned to any community, for spectrum availability reasons a basic block will consist of up to eight UHF or four VHF channels for one individual system.

3.2 Low Power FM

With respect to the retransmission of multiple, low-power FM radio signals, similar to the specifications in relation to low-power television systems, all FM transmitters shall be co-sited, operate on a non-protected, non-interference basis with respect to other broadcasting operations in accordance with Broadcast Procedures and Rules and function with Priority 2 protection as defined in Appendix 2. Moreover, only third adjacent channels could be assigned in any block of channels and no more than 12 FM radio signals may be rebroadcast in any one community on this basis. In addition, the effective radiated power (ERP) of each of the signals transmitted should not exceed 50 watts as noted under the provisions of Broadcast Procedures and Rules.

4. Implementation

Effective immediately, this policy is applicable to all broadcasting undertakings employing local, low-power transmission of multiple broadcast signals.

Issued under the authority
of the Minister of Communications

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Appendix 1

Levels of Protection - Television

The Department is in this policy establishing a hierarchy of television broadcasting undertakings - each one with different priorities with respect to interference protection.

- Priority 1 - television broadcasting or rebroadcasting stations assigned in accordance with Broadcast Procedures and Rules and allotments as described in the current Television Allotment and Assignment Plan and any allotments which may in future be "dropped-in" to this plan in accordance with established separation criteria.
- Priority 2 - low-power television broadcasting or rebroadcasting stations, or systems as described in this paper assigned to use a block of TV channels, operating on non-allotted channels as certified under Broadcast Procedures and Rules.
- Priority 3 - very low power television broadcasting stations or systems as described in this paper assigned to use a block of TV channels as certified under Broadcast Procedures and Rules.
- Priority 4 - either UHF or VHF television rebroadcasting stations used for relay purposes, (i.e., whose coverage contour contains no population), and whose assigned channel as certified under Broadcast Procedures and Rules is not allotted to the community (as proposed in the discussion paper *Use of Broadcasting Spectrum Allocations for Fixed Relays in Support of Broadcasting Operations*, December 1979).

Stations with Priority 1 would have the greatest protection and those with Priority 4 would have the least. Any station with a higher priority could claim protection from interference from stations with lower priorities regardless of authorization date. Within each level of priority, a station would have protection from all other stations authorized at a later date. Should the operation of a broadcast transmitting system established in accordance with these guidelines interfere with the reception within the protected coverage area of existing broadcasting stations with higher priorities or with the same priority but an earlier authorization date, remedial measures would have to be taken by the licensee even to the extent of terminating operations if another suitable channel could not be found. These remedial measures would also apply to the protection of future broadcasting stations with higher priorities established in this area if no other suitable channel(s) can be found.

Appendix 2

Levels of Protection - FM

In this policy the Department is establishing a hierarchy of FM broadcasting undertakings with regard to levels of interference protection.

- Priority 1 - FM radio broadcasting or rebroadcasting stations assigned in accordance with Broadcast Procedures and Rules and allotments as described in the current Canadian FM Broadcasting Allotment Plan and any allotments which may in future be "dropped-in" to this Plan in accordance with established separation criteria.
- Priority 2 - low-power FM broadcasting or rebroadcasting stations or systems as described in this paper assigned to use a block of FM channels (the block size may be considered as the width of the allocated frequency band) operating on non-allotted channels with an ERP of 50 watts as certified under Broadcast Procedures and Rules.
- Priority 3 - very low power FM radio broadcasting stations as certified under Broadcast Procedures and Rules.
- Priority 4 - FM radio rebroadcasting stations used for relay purposes, i.e., whose coverage contour contains no population using 50 watts ERP or less and whose assigned channel is not allotted to the community (as proposed in the discussion paper *Use of Broadcasting Spectrum Allocations for Fixed Relays in Support of Broadcasting Operations*, December 1979).