

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of:)
)
Amendment of Parts 73 and 74 of the) MB Docket No. 03-185
Commission’s Rules to Establish Rules for)
Digital Low Power Television, Television)
Translator, and Television Booster Stations)
and to Amend Rules for Digital Class A)
Television Stations)

To the Commission:

COMMENTS

Mullaney Engineering, Inc. (“MEI”), hereby submits its comments in response to the Notice of Proposed Rulemaking released by the Commission on August 29, 2003 in MB Docket No. 03-185 (“NPRM”), which proposed new Rules for digital conversion of analog Low Power Television, Television Translator, Television Booster, and Class A Television Stations. MEI’s comments relating to pertinent technical issues raised within the notice’s paragraphs are provided herein.

As recognized by the Commission in its NPRM, translators and LPTV stations provide a valuable function with many communities depending on these facilities for

over-the-air television service. Adoption of the proposed Rules will permit such stations to continue this valuable service into the digital television age.

Protected Contour Value: MEI supports the Commission's proposed protected contour values for digital Class A, LPTV, and TV translator stations. The use of the proposed values will maintain the "status quo" of existing analog service areas. Use of lower contour values which would increase a station's service area, while no doubt desirable from existing stations point of view, would require greater separation between cochannel and adjacent channel facilities, exacerbating the already difficult prospect of finding suitable transition channels in the crowded television frequency spectrum.

Allocation Standards: MEI believes the Commission should retain the existing contour overlap approach (modified as discussed below) as a first brush allocation method. In situations where acceptable channels can be identified employing this method, the process will be much simplified, will be less expensive for the applicant, and will also conserve Commission resources. Where a suitable channel cannot be so found, or at the option of the applicant, the use of the more involved DTV interference model employing the engineering criteria given in OET Bulletin 69 can be employed. **Acceptance of OET Bulletin 69 showings, where necessary or desired, should be automatic without the need to explicitly request a waiver.**

One suggested modification to the existing default contour overlap approach, is to **automatically include the effects of a directional receive antenna** as put forth in OET Bulletin 69. Doing so would result in more situations where the contour overlap approach would be able to identify suitable channels without adversely affecting the real world interference protection provided - again simplifying the process, reducing the expense of finding suitable channels and again making more efficient use of Commission resources.

A second suggested modification in applying the contour overlap approach (which should also be employed when applying OET Bulletin 69 analysis - see below) has to do with treatment of unrealistically suppressed theoretical directional antenna patterns. Unless the antenna manufacturer has certified that the directional antenna **when mounted as proposed** will actually produce deep nulls, a maximum suppression of 20 dB should be assumed. Many horizontal plane patterns contained in the Commission's "of-the-shelf" antenna pattern database show maximum suppressions (0.02 relative field) which are not achieved in practice. Reliance on these patterns to show absence of interference is misplaced and should not be permitted.

Modification of the OET Bulletin 69 DTV Methodology: As noted above, maximum suppression of a directional antenna horizontal plane pattern should be limited to 20 dB. Achieving greater reduction in actual practice is highly dependent on

antenna mounting and should not be relied upon when predicting potential interference, especially in a service which is still allocated on a secondary non-interference basis.

Another shortcoming of the existing DTV methodology, as recognized by the Commission in its NPRM, is in the use of the standard vertical plane pattern. The existing standard vertical plane patterns are based upon antennas typically employed by full service stations. The antennas typically employed by translator and LPTV stations have vastly different vertical plane patterns. The ideal situation would be to incorporate the actual vertical plane patterns employed in the Commission's CDBS so that accurate calculations can be made. A less acceptable but perhaps more practical approach would be to employ a series of "typical" vertical patterns based upon the type and size (number of bays) of the antenna employed. Using an accurate representation of the vertical plane pattern becomes more critical when stations are closer together and/or located close to the protected service area of another station, which is more likely the case with translator and LPTV stations than with full service stations. **Use of the existing standard vertical plane patterns in OET Bulletin 69 can result in severely understating the interference that will occur.** As for the horizontal plane patterns, a limit should be placed upon the maximum suppression of the vertical plane pattern assumed in interference calculations. A value of 26 dB is suggested.

Inclusion of the Effects Beam Tilt and Maximum ERP in Allocation Calculations:

Whether contour overlap or OET Bulletin 69 methodologies are employed, accurate results require that the effects of beam tilt (both electrical and mechanical) and the use of actual maximum ERP (not the ERP toward the radio horizon) are included in the calculations. As noted above when discussing the need for more appropriate vertical plane pattern assumptions, translator and LPTV stations can be located much closer together and much closer to the protected contour of the another station than is the case for full service stations. If the actual maximum vertical plane ERP and effects of any beam tilt are not employed, **predicted interference can be severely understated** - regardless of the methodology employed.

Enforced Use of Frequency Offset: Many existing analog translator and LPTV stations do not employ any frequency offset. This requires greater separation between cochannel stations in order to avoid prohibited interference. While it is recognized that modification of an existing facility to employ frequency offset can involve a non-trivial expense, in the light of the current congested condition of the television frequency spectrum, continuing the policy of voluntary implementation of employing frequency offset is a luxury that can no longer be afforded. When it can be shown that an existing station not employing offset precludes the use of a channel, then the existing station should be required to make the necessary modifications to employ offset operation at its own expense.

Conclusion: MEI congratulates the Commission on proposing Rules to implement the digital transition by Low Power Television, Television Translator, Television Booster, and Class A Television stations. The proposed Rules, incorporating the suggestions made herein, will provide a workable framework for bringing these stations into the digital television age.

Respectfully submitted,

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