

**Before the
Federal Communications Commission
Washington, D.C. 20554**

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

**COMMENTS OF THE ASSOCIATION OF
FEDERAL COMMUNICATIONS CONSULTING ENGINEERS
ON NOTICE OF PROPOSED RULE MAKING**

1. The Association of Federal Communications Consulting Engineers (AFCCE), an organization which is over fifty years old, includes approximately 85 full members who are Registered Professional Engineers engaged in the practice of consulting engineering before the Federal Communications Commission.

2. The Commission released a Notice of Proposed Rule Making proposing to Amend Parts 73 and 74 of the 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.¹ AFCCE's comments to the pertinent questions raised within the notice's paragraphs are herein provided.

3. Paragraph 14 – Transmission Modes for TV Translator Broadcasts. Both heterodyne and regenerative digital translators should be permitted - provided they meet all technical criteria established by the Commission for digital translators. It is estimated that approximately 90% of existing translators in service today are of the heterodyne type. In most cases, the most expedient conversion to digital is to modify these existing heterodyne translators. In most single hop translator systems, digital heterodyne translators will function adequately provided they meet the pertinent emission mask

¹ Notice of Proposed Rule Making, MB Docket No. 03-185, adopted August 6, 2003, released August 29, 2003.

requirement. To require the conversion to regenerative will create a significant financial burden on the translator operators when it may not be necessary.

4. In multi-hop operations, regenerative translators are usually preferred because the retransmitted signal can provide a greater signal-to-noise ratio compared to its received lower signal-to-noise ratio. However, regenerative translators could also function in such a multi-hop operation if high received signal-to-noise ratios are achieved. So, AFCCE believes the choice of heterodyne or regenerative digital translators should be available to the TV translator operator.

5. Paragraphs 28 to 30 – Channel Assignments. For existing analog LPTV and translator stations, we agree to allow existing analog licensees to convert to digital (on channel conversion), and continue the policy of allowing them to operate on a secondary non-interfering basis. AFCCE suggests that if and when the Commission deems that a digital channel could be paired with an analog LPTV, Class A or TV translator station, then channels 52-69 be permitted for digital LPTV or translator facilities during the transition - regardless of the lower channel availability. The TV/DTV spectrum congestion in the medium to large markets requires the additional channels for digital use, and still in many instances, even those channels would even be precluded. Furthermore, an existing analog LPTV or TV translator facility located on within Channels 52-69 may wish to be paired with an adjacent channel DTV facility, which of course would also be on a channel between 51 to 69. The use of an adjacent channel may permit utilization of the existing antenna, thus achieve a cost savings to the operator. Also, since the TV Translator/LPTV permittees and licensees recognize that the out of core channels will eventually become unavailable for their service, there will already be an inherent incentive to avoid these channels.

6. Paragraphs 31 to 33 – Service Contours. We concur that Class A stations, both digital and analog, should have the same protected contour values as translators and LPTV stations.

7. Paragraphs 34 to 40 – Broadcast Station Protection. We agree that the protection to full service and LPTV/TV Translators should be executed on the basis of desired-to-undesired ratios (D/U), pursuant to the OET-69 methodology incorporating the proper use of vertical pattern (discussed in greater detail in the next section). If the Commission believes - based upon other comments - that multiple emission masks are needed for TV Translators and LPTV stations, AFCCE requests that these alternate emission masks be limited to the (1) in-core channels and (2) non Class A facilities. Limiting these alternate emission masks to the in-core channels could be another incentive to encourage digital LPTV/TV Translators to operate below channel 52, if the allocation situation permits. Also, since Class A stations have voluntarily requested protected status and thus have a greater threshold of reasonability, the requirement of using the present emission mask should be maintained.

8. Paragraphs 41 to 49 – Interference Prediction Methodology. AFCCE believes the OET-69 interference prediction methodology, which incorporates the Longley Rice propagation model should be used instead of the previously used contour method, if adequate representation of the station's vertical pattern and beamtilt(s) is provided. We believe the OET-69 methodology is warranted because this method provides for more efficient spectrum utilization compared to the protected contour analysis.

9. Besides a default vertical plane radiation pattern for TV Translators/LPTV stations (using a band specific {UHF, high-VHF and low-VHF} representative default relative field pattern), AFCCE requests that the applicant also have the option of providing a custom vertical pattern. This option should be incorporated into CDBS, allowing the pattern to be shared within the community, as has become the case for horizontal plane pattern for directional antennas. Also, the applicant should be required to define any electrical and/or mechanical beamtilting used within the antenna system. The present FCC Form 346, used by LPTV and TV Translators for an application for construction permit, and FCC Form 301-CA, used by Class A applicants, are deficient in permitting the applicant just to specify the effective radiated power toward the radio horizon and the maximum effective radiated power at any depression angle. Additional information, such as the magnitude of the antenna beamtilting (for both electrical and/or mechanical) and the azimuth of any mechanical beamtilting should be submitted by the applicant.

10. We also believe that the OET-69 interference method should be adopted for analog LPTV, TV translator and Class A analyses. Although there should be fewer of analog applications filed, to mitigate the concerns of unequal treatment, this OET-69 methodology should be permitted by analog applicants.

11. The use of *de minimus* interference threshold should also be permitted by Class A/LPTV/TV Translators, such as already used by full service stations. We believe that a 2% *de minimus* interference standard should be applied from digital LPTV, translators and Class A stations to other Class A, LPTV and translator stations, analog or digital. Full service DTV stations should be permitted also a 2% *de minimus* interference standard to Class A stations (both analog and digital). As for interference to full service stations (both analog and digital), we believe the current 0.5% threshold is satisfactory. We believe that this will permit more efficient use of spectrum resources and allow more digital channels to be allocated and thus hastening the digital transition.

12. As for calculating the “baseline” values to determine calculate the *de minimis* threshold, AFCCE suggest simply the use of the population contained within the protected contour (and in the case of a UHF facility, the dipole corrected contour value) for the respective Class A/LPTV/Translator facility. Facilities simply converting their analog facilities to digital should be permitted to maintain any existing interference to any other facility (i.e. employ interference “masking” from their associated analog facilities).

13. In performing the OET-69 interference prediction methodology calculations, AFCCE believes the use of the 1 square kilometer grid resolution should be the maximum permitted in evaluating the interference to Class A, LPTV and TV translator facilities. Since Class A, LPTV and TV translator service areas are generally relatively small compared to a full-service station, a finer grid resolution analysis would provide a more accurate representation of interference.

14. Paragraph 51 – Co-located Operation on Adjacent Channels. AFCCE agrees with the proposal regarding the waiving of adjacent channel analog operation provided the (1) relevant D/U ratios are satisfied, (2) aforementioned implementation of OET-69 is employed and (3) the stations are co-located. For administrative purposes, we suggest that co-located facilities be defined as the transmitter site of the stations located 2 kilometers or less from each other.

15. We agree with the philosophy of requiring a frequency offset for all analog LPTV and translator stations. This could be instituted that any change being requested by an analog station (either minor or major), be required to specify a frequency offset.

16. Paragraphs 118-112 Digital Booster Stations. Digital booster stations, which would be utilized by full service stations, can provide an engineering solution when translator channels may not be available. While we recommend these facilities be permitted, as this service is another ingredient in achieving a quicker and more complete solution to digital coverage, we understand this may be part of a larger issue regarding the use of signal frequency networks (SFN) for full-service digital stations. Therefore, in the interim until the SFN Rules are finalized, AFCCE encourages the Commission to begin to quickly permit boosters on an STA basis, by limiting the booster STA facility noise-limited contour to be encompassed by the noise-limited contour of its associated primary station's authorized or allotted noise-limited contour.

Respectfully Submitted,

/s/

Thomas B. Silliman, P.E.

President

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