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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	)	MB Docket No. 03-185
Low Power Television, Television Translator, and	)	
Television Booster Stations and to Amend Rules	)	
for Digital Class A Television Stations	)	

NOTICE OF PROPOSED RULE MAKING

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By the Commission:

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I. INTRODUCTION

1. With this *Notice of Proposed Rule Making*, we seek comment on rules for digital low power television ("LPTV") and television translator stations, and consider issues related to digital television booster stations. Translators and LPTV stations will play a significant role in furthering the transition to digital television. Viewers in many communities depend on the services of TV translator and LPTV stations for their over-the-air television service. Through our rules, policies and application processes, we seek to provide flexible and affordable opportunities for low power digital service, both through the digital conversion of existing analog service and, where spectrum is available, new digital stations. We seek to develop interference protection rules and methodology that will provide spectrum for new digital stations without undermining established interference protection rights. The *Notice* also addresses key issues relating to permissible service, spectrum for digital low power service, protected service area, equipment and other technical and operational requirements, and authorization of digital service. It seeks comment on the impact of our proposals on television broadcast and other primary services, particularly those in the 470-512 MHz band and the new services in the 698-806 MHz (Upper and Lower 700 MHz) bands.

2. Our goals in this proceeding are to establish a regulatory framework that will hasten the transition of LPTV and TV translator stations to digital operations and to do so in a manner that minimizes disruption of existing service to the consumers served by analog LPTV and translator stations. We are mindful of the challenges presented by limited spectrum availability for new digital stations in certain areas of the country and the limited budgets of many stations in the LPTV service. In this proceeding we seek comment on a number of measures to facilitate the availability and permitted use of TV channels for digital operations, particularly with regard to the transition of existing analog service. For instance, we consider replacing the analog LPTV contour protection methods with the more flexible digital television ("DTV") interference prediction methodology. We also seek comment on flexible means for digital translator operations, for example, the combining the signals of two or more DTV broadcast stations on a translator's transmitted output channel, provided such operation is technically and economically feasible. We propose to permit digital LPTV stations to provide ancillary and supplementary services upon meeting a minimum video program service requirement. To expedite authorization of service, we propose that LPTV and translator operators be permitted convert to digital on their existing analog channels by applying for a minor facilities change at any time. We seek comment on filing procedures for new digital stations that would facilitate the transition of existing LPTV and translator service and quicken the authorization of digital service. The *Notice* invites comment on these and other technical, legal, and policy issues. Additionally, we seek comment on any

other issues that may be relevant to this proceeding.

II. BACKGROUND

3. The Commission created the low power television service (Subpart G of Part 74 of the Commission's Rules) in 1982.[1] The low power television service consists of low power television, television translator, and television booster stations. Stations in the low power television service are authorized with "secondary" frequency use status. These stations may not cause interference to, and must accept interference from, full-service television stations, certain land mobile radio operations and other primary services.[2] As the name suggests, low power television service stations have lower authorized power levels than full-service TV stations.[3] Unlike full-service stations, stations in the low power television service are not restricted to operating on a channel specified in a table of allotments.

4. *LPTV Stations.* The Commission created low power television stations to bring television service, including local service, to viewers "otherwise unserved or underserved" by existing service providers.[4] LPTV stations may originate programming and retransmit the programs of full-service television stations. Currently, there are approximately 2,100 licensed LPTV stations.[5] These stations operate in all 50 states and serve both rural and urban audiences.[6] Because they operate at reduced power levels, LPTV stations serve much smaller geographic regions than full-service stations, and they can provide service to areas where a higher power station cannot be accommodated in the Table of Allotments. An LPTV station may be the only television station in an area providing local news, weather, and public affairs programming.[7] Even in some well-served markets, LPTV stations may provide the only local service to residents of discrete geographical communities within those markets.[8] Many LPTV stations air "niche" programming, often locally produced, to residents of specific ethnic, racial, or special interest communities.[9]

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[1] *Report and Order*, 51 R.R.2d 476 (1982).

[2] *See, e.g.*, 47 C.F.R. §§ 74.703, 74.709, 90.303.

[3] LPTV stations may radiate up to 3 kilowatts of power for stations operating on the VHF band (*i.e.*, channels 2 through 13), and 150 kilowatts of power for stations operating on the UHF band (*i.e.*, channels 14 through 69). By comparison, full-service stations on VHF channels 7 through 13 radiate up to 316 kilowatts of power, and stations on the UHF channels radiate up to 5,000 kilowatts of power. LPTV signals typically extend approximately 15 to 20 miles, while the signals of full-service stations can reach as far as 60 to 80 miles.

[4] *See, e.g., Notice of Proposed Rule Making*. 45 F.R. 69178 (Oct. 17, 1980).

[5] *Public Notice*, Broadcast Station Totals as of March 31, 2003 (May 5, 2003).

[6] *See Establishment of a Class A Television Service*, 15 FCC Rcd 6355 (2000) ("*Class A Report and Order*"), *on recon.*, 16 FCC Rcd 8244 (2001).

[7] *See Class A Report and Order*, 15 FCC Rcd at 6357, ¶ 2 (*citing Review of the Commission's Rules Governing the Low Power Television Service*, 9 FCC Rcd 2555 (1994) ("*LPTV First Report and Order*").

[8] *Class A Report and Order*, 15 FCC Rcd at 6358, ¶ 2.

[9] *Id., citing LPTV First Report and Order*, 9 FCC Rcd at 2555; *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, 11 FCC Rcd 10968, 10995 (1996).

5. In the Community Broadcasters Protection Act of 1999 ("CBPA"),[10] Congress directed the Commission to establish a Class A television service to provide a measure of primary status to certain LPTV stations so that those stations could continue to operate during and after the digital transition. In order to qualify for Class A status, an LPTV station was required to have broadcast a minimum of 18 hours per day during the three month period preceding enactment of the CBPA and to broadcast an average of at least 3 hours of locally produced programming per week. The CBPA directed that Class A licensees must be subject to the same license terms and renewal standards as full-power television licensees, and that Class A licensees should be accorded primary status as television broadcasters as long as they continue to meet the requirements set forth in the statute. Class A TV stations are similar in many respects to LPTV stations; their operations are generally governed by the same technical standards. Unlike LPTV stations, Class A stations must comply with Part 73 regulations applicable to full-service TV broadcast stations, except for those that cannot apply for technical or other reasons. Class A stations also are afforded certain interference protection rights not available to LPTV stations. The Class A service rules (Part 73, Subpart J) also contain provisions for the operation of digital Class A TV stations. The Commission has licensed approximately 600 Class A stations.

6. *TV Translator Stations*. A TV translator station is a low power television broadcast station that receives the signal of a television station and simultaneously retransmits it on another TV channel. Television translators are technically equivalent to LPTV stations in most respects and are licensed in the same manner.[11] Television translator stations are intended to provide service to areas where direct reception of full-service broadcast stations is unsatisfactory because of distance or intervening terrain obstructions. Although translators are not limited to operation within the contour of the station they rebroadcast, they may be used to provide "fill-in" service to terrain-obstructed areas within a full-service station's service area. There are approximately 4,700 licensed TV translators,[12] most operating in the western regions of the country. These stations are often used to deliver the only free off-air television service available to rural communities.

7. LPTV and TV translator stations differ only in the amount of programming they may originate. LPTV stations are not limited in the amount of programming they may originate. TV translators may originate only emergency warnings of imminent danger and, in addition, not more than thirty-seconds per hour of public service announcements and material seeking financial support necessary to the continued operation of the station.[13]

8. *TV Booster Stations*. The regulatory provisions for television booster stations were adopted by the Commission in 1987.[14] TV booster stations are intended to provide fill-in service to areas within the predicted Grade B contours of full-service television stations. TV boosters simultaneously retransmit the programming of full-service TV stations and may be licensed only to licensees and

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[10] Pub. L. No. 106-113, 113 Stat. Appendix I at 1501A-594 - 1501A-598, codified at 47 U.S.C. § 336(f).

[11] Licensees can switch between LPTV and TV translator designation by simple letter notification to the Commission. 47 C.F.R. § 74.732(e).

[12] *Public Notice*, Broadcast Station Totals as of March 31, 2003 (May 5, 2003).

[13] 47 C.F.R. § 74.731(f).

[14] *See Amendment of Part 74 of the Commission's Rules Concerning FM Booster Stations and Television Booster Stations*, 2 FCC Rcd 4625 (1987).

permittees of full-service stations. TV boosters transmit on the same TV channel as that of the full-service station they rebroadcast and are permitted to broadcast only within the Grade B contour of the associated full-service station.

III. ISSUE ANALYSIS

A. Permissible Service

1. Digital Television Translator Stations

9. Television translators have provided a valuable service in delivering television programming to locations where the signals of TV broadcast stations cannot be directly received due to distance or terrain obstructions. We envision that translators will also play a significant role in delivering digital television service to such locations. To that end, we propose generally that digital TV translator stations should be operated for the purpose of rebroadcasting the programs and signals of DTV stations. We seek to craft service rules that will enable translators to provide DTV programming to the millions of viewers who depend on translators as a source of free television service. In so doing, we must consider the differences in the nature of analog and DTV broadcast signals, the types of digital equipment that have been developed, and the costs of providing service.

10. *Current Permissible Service for TV Translator Stations.* A television translator station is "a station in the broadcast service operated for the purpose of retransmitting the programs and signals of a television broadcast station, without significantly altering any characteristic of the original signal other than its frequency and amplitude, for the purpose of providing television reception to the general public."[15] Translators simultaneously retransmit such programs and signals subject to the prior written consent of the TV broadcast stations whose signals are rebroadcast.[16] TV translators may receive TV broadcast signals directly off-air or indirectly from other TV translators or suitable sources.[17] Translator rebroadcasts may be accomplished through direct frequency conversion of a TV station's signal to the translator's assigned output channel or, where microwave transport is used, by modulation of the baseband video and audio signals onto the translator output channel.[18] A TV translator may originate local public service announcements or messages seeking or acknowledging financial support necessary for its continued operation, not to exceed 30 seconds per hour. It may also originate emergency warnings deemed necessary to protect life and property.[19]

11. *Nature of DTV Broadcasting.* Fundamental differences exist between analog and digital television broadcasts that could affect the permissible service of DTV translators. Analog broadcasts consist of single TV program signals transmitted in conformance with a specified wave form.[20] A DTV

[15] 47 C.F.R. § 74.701.

[16] 47 C.F.R. § 74.784. The rebroadcast consent requirement is statutory. *See* 47 U.S.C. § 325(a).

[17] 47 C.F.R. § 74.731.

[18] *Id.*

[19] *Id.*

[20] Certain ancillary services may also be transmitted in the vertical blanketing interval and video and aural portions of the television signal. *See* 47 C.F.R. §§ 73.646, 73.665, 73.667 and 73.682.

signal consists of a dynamic stream of video, audio and data packets. The digital content has a "payload" capacity of 19.38 megabits per second within a 6 MHz television channel. DTV broadcasters have significant flexibility as to how they may use this capacity. The Commission's DTV transmission standard permits numerous video formats that are characterized by different bit consumption rates and TV picture quality.[21] High definition ("HDTV") formats produce the sharpest video images and have the highest bit rates. Standard definition ("SDTV") formats produce video images comparable to or better than analog TV and are less bit-consumptive than HDTV formats. A DTV broadcaster may use its total bit capacity to transmit simultaneously one or more television programs in the same video format or transmit programs in different formats. For example, a single program may be transmitted in an HDTV format. Alternatively, multiple programs in an SDTV format may be multi-casted.[22] DTV broadcasters may dynamically alter the use of their channel bit capacity. For example, a station may multi-cast SDTV programs during day-time hours and switch to HDTV programming during evening hours. As a minimum service requirement, our rules require only that a DTV station transmit "at least one over-the-air video programming signal at no direct charge to viewers on the DTV channel...at least comparable in resolution to the [associated] analog television station programming."[23] After meeting this requirement, a DTV broadcaster may use its remaining digital capacity to offer a wide variety of ancillary and supplementary services, including service on a subscription basis.[24] These services may be intended for reception by a DTV receiver or may be intended for reception by other devices (*e.g.*, personal computers).

12. *Digital Translator Rebroadcasts.* We expect that a digital TV translator station should be technically capable of rebroadcasting the entire incoming signal of its primary DTV broadcast station and producing a digital output signal that can be satisfactorily viewed on a receiver designed for the Commission's DTV transmission standard. We seek a definition for a digital TV translator consistent with this tentative conclusion. If we were to extend the current analog translator definition, a digital TV translator would be a station operating for the purpose of retransmitting the programs and signals of a DTV broadcast station for reception by the general public, without significantly altering any characteristic of the original signal other than its frequency and amplitude. A digital TV translator would "pass through" the content and video format of a primary DTV station (*e.g.*, an HDTV input signal would be retransmitted as an HDTV output signal). We seek comment on how to define digital TV translators and, in particular, how allowances for local message insertions should be incorporated into the definition.

13. In the *Notice of Proposed Rule Making* initiating the second periodic review of the transition to digital television ("*Second DTV Periodic Review NPRM*"),[25] we asked a series of questions

[21] 47 C.F.R. § 73.682(d).

[22] Other possible combinations exist such as the simultaneous transmission of one program in HDTV and another in the SDTV video format.

[23] 47 C.F.R. § 73.624(b).

[24] *See* 47 C.F.R. § 73.624(c), which includes the following as examples of ancillary and supplementary services: computer software distribution, data transmissions, teletext, interactive materials, aural messages, paging services, audio signals and subscription video. DTV broadcasters are levied an annual "fee of five percent of the gross revenues derived from all ancillary or supplementary services...which are feeable." 47 C.F.R. § 73.624(f).

[25] *Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, Public Interest Obligations of TV Broadcast Licensees*, 18 FCC Rcd 1279 (2003).

about the carriage of digital signals by television translators and how that carriage should be interpreted under Section 309(j)(14) of the Communications Act.[26] Section 309(j)(14)(A) requires the Commission to reclaim the 6 MHz each broadcaster uses for transmission of analog television service by December 31, 2006, unless one or more of three conditions that qualify a station for an extension exist in a market.[27] In connection with Section 309(j)(14)(B)(iii), we asked about the impact on the availability of extensions in a market where a signal originally broadcast in digital format is carried on a cable system in analog format because the signal was delivered to the cable head end via a TV translator that operates only in analog format (*e.g.*, the digital broadcast transmission was down-converted to analog by the translator). We also asked what the impact on extensions under Section 309(j)(14)(B)(iii) would be when a full-service station originally broadcasts a signal in digital format, but viewers receive the signal over-the-air in analog format from a translator that has down-converted the signal from digital to analog.[28] We noted

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[26] 47 U.S.C. § 309(j)(14).

[27] Section 309(j)(14) provides:

> (A) LIMITATIONS ON TERMS OF TERRESTRIAL TELEVISION BROADCAST LICENSES. – A television broadcast license that authorizes analog television service may not be renewed to authorize such service for a period that extends beyond December 31, 2006.
>
> (B) EXTENSION. – The Commission shall extend the date described in subparagraph (A) for any station that requests such an extension in any television market if the Commission finds that –
>
> > (i) one or more of the stations in such market that are licensed to or affiliated with one of the four largest national television networks are not broadcasting a digital television service signal, and the Commission finds that each such station has exercised due diligence and satisfies the conditions for an extension of the Commission's applicable construction deadlines for digital television service in that market;
> >
> > (ii) digital-to-analog converter technology is not generally available in such market; or
> >
> > (iii) in any market in which an extension is not available under clause (i) or (ii), 15 percent or more of the television households in such market –
> >
> > > (I) do not subscribe to a multichannel video programming distributor (as defined in section 602) that carries one of the digital television service programming channels of each of the television stations broadcasting such a channel in such market; and
> > >
> > > (II) do not have either –
> > >
> > > > (a) at least one television receiver capable of receiving the digital television service signals of the television stations licensed in such market; or
> > > >
> > > > (b) at least one television receiver of analog television service signals equipped with digital-to-analog converter technology capable of receiving the digital television service signals of the television stations licensed in such market.

[28] *Second DTV Periodic Review NPRM*, 18 FCC Rcd at 1311, ¶¶ 89-91.

that Section 74.701 of our rules requires that TV translators retransmit the signals of the primary station "without significantly altering any characteristic of the original signal other than its frequency and amplitude."[29] We asked whether our rules should permit TV translators to down-convert to analog format a signal originally broadcast by the parent station in digital format.[30] We seek comment here on how these issues relate to the appropriate definition of a "digital TV translator" and what, if any, limitations should be imposed on the ability of a translator to alter the signal of the main station.

14. We seek comment on two transmission modes for digital TV translator rebroadcasts: (1) heterodyne frequency conversion and (2) a "regenerative" mode. Like its analog counterpart, the heterodyne digital translator would receive the signal of a DTV broadcast station or another digital translator, amplify the signal, and retransmit it on the translator's authorized output channel.[31] The "regenerative" translator could also retransmit all DTV broadcast content, but it would also perform signal and data processing to mitigate distortion and bit errors in the input signal. It would function as a DTV receiver/processor and transmit a "cleaned up" digital bit stream.[32] The heterodyne digital translator is conceptually less complex than the regenerative translator and less costly. Its lower cost might be preferred in certain situations (*e.g.*, in "single-hop" translator systems serving very small communities). The regenerative DTV translator could be particularly beneficial in multi-hop translator networks[33] because the technical quality of the translator output signal could be restored at each translator in the network.[34] We seek comment on the use of heterodyne and regenerative digital translators, including their utility, advantages or disadvantages. In particular, we seek information from technology proponents on the state of development of both types of digital TV translators and related costs. Should we prefer the use of regenerative digital translators because of their signal and data processing functions? Is there a role for heterodyne digital translators? Should we permit translator operators to choose their mode of

[29] 47 C.F.R. § 74.701(a); *see also* 47 C.F.R. § 74.731(d). ("The technical characteristics of the retransmitted signals shall not be deliberately altered so as to hinder reception on conventional television broadcast receivers").

[30] It is technically possible for an analog translator to be equipped to receive a DTV input signal and convert the signal for analog retransmission on the translator output channel.

[31] Simple heterodyne conversion involves the mixing of the radio frequencies ("RF") of an input signal with those generated by a tuned local oscillator, shifting the signal directly to the RF frequencies of the desired output TV channel. A more sophisticated heterodyne translator first converts an incoming signal to a standard intermediate frequency ("IF") and then "up-converts" the IF signal to the desired TV output channel.

[32] The "receiver" portion of the process entails conversion of the received DTV broadcast signal to the translator's standard IF frequency, followed by demodulation to reduce the signal payload to its "symbol" output form. Symbols are then processed by an adaptive equalizer to correct for multipath distortion and sent to the VSB decoder, which converts the signal content to a stream of video, audio and data packets. The decoder also provides "forward error correction" to correct bit errors. This packetized signal content is then sent to the transmitter portion of the DTV translator, including a VSB encoder, modulator and frequency up-converter, where the data and signal processing steps are reversed. The encoder restores forward error correction to the output signal. The up-converter converts the output channel IF frequency to the translator's authorized TV channel for final amplification and transmission.

[33] In a multi-hop network, the signal of a TV broadcast station is directly received off-air by the first translator in the network chain and retransmitted for viewing in the associated served-community. This translator's output signal is also received and retransmitted by one or more subsequent-level translators serving other communities in the chain.

[34] In analog multi-hop translator networks, the technical quality of the original TV broadcast signal deteriorates as it passes through the network.

transmission based on individual circumstances? Finally, should we consider additional digital translator rebroadcast modes (*e.g.*, digital rebroadcasts of analog input signals)?

15. *Translator Local Signal Insertions.* It is likely that translator operators will limit their initial use of digital translators to rebroadcasts of DTV signals. Eventually, however, some may wish to use digital translators to transmit the types of local messages now allowed for analog translators (*e.g.*, public service announcements or emergency warnings). We believe that permitting such messages could benefit translator-served communities, provided a technically feasible and affordable means for doing so exists or could be developed. We seek comment on the merits of local message insertion and the permissible nature and duration of such messages. Should digitally transmitted local messages be limited to the types of messages permitted for analog TV translators? We also seek comment on available technical means for local message insertion and transmission. For example, in the regenerative transmission mode, could small amounts of information be inserted into the DTV signal transport layer without significantly altering broadcast content?[35] Broadcasters may dynamically use their digital bit stream, and the availability of unused portions of the bit stream ("null packets") could vary with time. Thus, a translator operator may need to coordinate any such local message insertions with its primary DTV station. Is digital translator local message insertion technically feasible and affordable at this time? What additional equipment would be required and at what cost?

16. *DTV Broadcast Signal Alterations.* We request comment on whether a digital translator operator should be permitted some flexibility to alter the content or video format of a DTV broadcast signal prior to retransmission, provided it has been given the consent of its primary DTV station. Because of limited spectrum availability, we expect that many translator operators will have difficulty securing additional channels for rebroadcasting the DTV programming of the analog TV stations included in their systems.[36] Until a sufficient base of DTV receivers exists in translator-served communities, translator operators may be reluctant to terminate analog TV rebroadcasts to create channel opportunities for DTV rebroadcasts. As a result, during the DTV transition, translator-served viewers may be unable to receive DTV signals of all of the analog TV stations they are accustomed to watching. We seek possible means of alleviating this situation. As one means, we wish to explore the idea of permitting DTV translators to rebroadcast in the same output channel multiple video program streams of different broadcast stations, pursuant to arrangements with the involved TV station licensees. Such digital translator "multi-casting" might, in most cases, require that DTV programs be rebroadcast in a standard definition (SDTV) video format. In that event, program signals received by a translator would be reduced to baseband signals and reassembled in an SDTV format prior to signal multiplexing and retransmission. If technically feasible and affordable, translator multi-casting could offer viewers access to the DTV programming of more television stations, particularly in those areas with the least channel availability. However, this approach would likely provide fewer opportunities to receive high definition television programming. Also, at the present time, the necessary equipment for such operations may be

[35] Packetized information could be inserted into the transport stream by a service multiplexer (a packet combiner/modulator). In a regenerative digital translator, the multiplexer would be placed between the VSB decoder in the receiver portion and the VSB encoder in the transmitter portion. For instance, small amounts of local information could replace "null packets" in the transport stream (*i.e.*, empty packets in the stream not used by a broadcaster to convey video, audio or data content). Heterodyne digital translators would not be capable of inserting messages in this manner.

[36] Typically, a television translator system rebroadcasts the programming of 5-7 TV stations.

cost-prohibitive for translator operators.[37] We invite comment on the merits, technical feasibility and cost of the DTV translator multi-casting concept described above. If not feasible at this time, is it a concept worthy of future consideration? More generally, we seek comment on the extent to which DTV translators should be permitted to alter the characteristics of DTV broadcasts signal prior to retransmission. Should translator operators be permitted to change the video format of a DTV program or exclude retransmission of portions of a DTV signal related to ancillary and supplementary ("A&S") services (*e.g.*, where a DTV broadcast station offers subscription A&S service)? Should a DTV broadcaster be permitted to withhold its retransmission consent if a TV translator operator seeks to retransmit only the free over-the-air video portions of that broadcaster's signal? Pursuant to an arrangement with the primary DTV broadcast station, should translator operators be permitted to replace the broadcaster's A&S portion of the digital bit stream with locally generated messages or its own ancillary and supplementary services? Should translator operators be permitted to offer A&S services on a subscription basis and, if so, should the A&S fees applicable to DTV broadcasters apply to DTV translators? Should DTV translator operators be permitted to provide A&S services for the sole purpose of funding the operation and maintenance of translator systems?

17. *Digital Translator Input Signal Sources.* We propose to allow digital TV translators to receive DTV broadcast signals using any of the signal delivery means available to analog TV translators (*e.g.*, a TV translator relay or other suitable terrestrial microwave source.)[38] Such flexibility could facilitate the implementation of digital TV translators. Signal delivery through multi-hop translator networks may not always be feasible due to lack of TV channel availability, whereas frequencies might be available in a Broadcast Auxiliary Service ("BAS") microwave band.[39] Translator operators are eligible to use BAS frequencies for translator relays on a secondary non-interfering basis.[40] We seek comment on this proposal.

2. Digital Low Power Television Stations

18. Low power television stations also have provided a valuable service in providing television programming, including locally-produced programs, to rural communities and ethnic and other specific communities within urban areas. We believe that LPTV stations will play a significant role in bringing digital television service to these and other communities.

19. *Current Permissible Service for Analog Low Power Television Stations.* By definition, an

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[37] A translator multi-casting system would require separate receiving subsystems for each DTV station signal. The receiver would require the capability to select the desired program in a DTV signal and process the program content to enable SDTV signal multiplexing. For example, it would be necessary to reduce an HDTV signal to baseband video and audio signals before being reconstituted as SDTV signals. This could necessitate use of HDTV decoding and SDTV encoding equipment, a multiplexer to combine the individual SDTV transport streams, and perhaps other specialized equipment.

[38] 47 C.F.R. § 74.731(b).

[39] All BAS microwave bands may now be used for digital transmissions with any available signal modulation format. *See Revisions to Broadcast Auxiliary Service Rules in Parts 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service, and Fixed Services in Parts 74, 78 and 101 of the Commission's Rules,* 17 FCC Rcd 22979 (2002).

[40] 47 C.F.R. § 74.600.

LPTV station may provide the following services in any combination: (1) television station signal rebroadcast, (2) program origination of unlimited amount, and (3) subscription television service.[41] Program originations are defined as "any transmissions other than the simultaneous retransmission of the programs and signals of a TV broadcast station...[and] shall include locally generated television program signals and program signals obtained via video recordings (tapes and discs), microwave, common carrier circuits, or other sources."[42]

20. *Distinctions Between Low Power Television and Television Translator Stations.* TV translators and LPTV stations use the same TV channels and operate under the same technical standards. Our rules permit LPTV stations to rebroadcast TV station programming.[43] Conversely, by notification to the Commission, TV translators may become LPTV stations and originate programming more than 30 seconds per hour. Yet, our experience has been that LPTV and TV translator stations largely serve different purposes. Translator licensees have generally limited their operations to TV rebroadcasts. LPTV stations have aired programming from non-TV broadcast sources and locally produced programs. We seek comment on how we should definitionally distinguish between digital LPTV and TV translator stations. Is it likely that digital LPTV and TV translator stations will serve different purposes? Should a digital LPTV station be defined as a station that may originate programming more than 30 seconds per hour? How should this benchmark and the term "program origination" be interpreted given the differences between analog TV and DTV signals? For example, if a station rebroadcasting a DTV signal were permitted to insert local messages into the DTV bit stream, should transmission of such messages in excess of 30 seconds per hour define it as an LPTV station? Alternatively, should a digital TV translator station, by definition, be permitted to insert some amount of information into a DTV bit stream for some specific time duration? If so, how much and what type of information? Is there a better way to craft a regulatory distinction between digital TV translator and LPTV stations? Should we continue to recognize a distinction between TV translator and LPTV stations when they operate in the digital transmission mode?

21. *Permissible Digital Low Power Television Service.* The Commission established LPTV stations with a "secondary" regulatory status. As such, it concluded that LPTV stations "should be subject to a minimum of program-related regulations, so they might be fully responsive to marketplace conditions." The Commission established the following principle for permissible LPTV service:[44]

> "The principal structural limit we shall impose on low power stations with respect to programming is that the programming aired must comply with the definition of 'broadcast' in the Communications Act and Section 73.641(b) of the Commission's Rules. Where a potential use of radio frequencies has not yet been authorized for broadcast use, it will not be permitted via low power."[45]

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[41] 47 C.F.R. §§ 74.701(f), 74.731(g).

[42] 47 C.F.R. § 74.701(h).

[43] An LPTV station may operate in the translator mode only with the written consent of the TV broadcast station whose signal is being retransmitted.

[44] *See Report and Order*, 51 R.R.2d 476 (1982), ¶ 103.

[45] *Id.*, ¶ 104. Broadcasting is "the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations." 47 U.S.C. § 153. A subscription television program is "a (continued....)

22. Consistent with this principle, we wish to provide LPTV station licensees and their viewers the opportunity to realize the full benefits of digital television technology, including the flexible service offerings available from DTV stations. In this regard, we must consider whether to adopt a minimum program service requirement for digital LPTV stations. DTV and digital Class A TV stations must broadcast a free over-the-air video program service at least comparable to NTSC technical quality.[46]

23. We tentatively conclude that digital LPTV stations should be subject to the same minimum video program service requirement applicable to DTV broadcast and digital Class A stations. Accordingly, digital LPTV stations would be required to use some of their channel capacity to provide a free video programming service of at least NTSC technical quality, intended for reception by the general public. Digital LPTV stations will be broadcast stations operating on television channels, a difference being the requirement that they operate on a secondary basis to primary services. Many LPTV stations serve as the only local television station and source of local TV news and public affairs programming to their communities. Therefore, we believe that a minimum program service requirement would be appropriate. Further, LPTV and translator station operators will compete for the remaining available TV channels for their digital operations. Translators will deliver free over-the-air DTV programming to areas that cannot be reached directly by DTV broadcast stations. In our view, digital LPTV stations also should provide a free over-the-air video programming service to their communities, whether in the form of a DTV rebroadcast or other video programming.[47] We seek comment on this tentative conclusion.

24. We also tentatively conclude that digital LPTV stations should be permitted to use their bit stream dynamically to transmit one or more digital programs in any DTV video format. Upon meeting the minimum video service requirement, we believe that digital LPTV stations should be permitted to offer all of the ancillary and supplemental services, including subscription services, allowed for DTV and digital Class A TV broadcasters.[48] They should also be permitted to enter into arrangements with outside parties with regard to ancillary and supplementary service operations in the manner permitted for DTV broadcasters.[49] The opportunity to offer such services may encourage the early operation of digital LPTV stations. We propose to apply to digital LPTV stations the public interest-related obligations applicable to analog LPTV stations.[50] We invite comment on these tentative conclusions and proposals. With regard to public interest criteria, is there any reason to treat analog and digital LPTV stations differently?

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television broadcast program intended to be received in intelligible form for a fee or charge." 47 C.F.R. § 73.641(b).

[46] *See* 47 C.F.R. § 73.6026, which references Section 73.624(b).

[47] *See* 47 C.F.R. § 74.701(g).

[48] *See* 47 C.F.R. §§ 73.624(c), 73.6026. Digital Class A ancillary and supplementary services may not derogate free over-the-air video service and are subject to the fees applicable to DTV broadcasters under Section 73.624(g) of our rules.

[49] *See* 47 C.F.R. § 74.624(c).

[50] *See* 47 C.F.R. § 74.780, "Broadcast regulations applicable to translators, low power, and booster stations." For example, this rule references, among others, Sections 73.1212 and 73.1940, which pertain to sponsorship identification and broadcasts by candidates for political office, respectively. *See also* the closed captioning requirements in Section 79.1 and *Second Periodic Review of the Commission's Rules and Policies Affecting Conversion to Digital Television, Public Interest Obligations of TV Broadcast Licensees*, 18 FCC Rcd 1279 (2003).

25. Assuming we adopt a minimum video programming service requirement, we seek comment on a permissible service alternative that would permit LPTV stations to provide only ancillary and supplementary services under special circumstances, for example, during particular hours of the day, such as 12:00 a.m. to 6:00 a.m. What circumstances, if any, would justify exclusion of a minimum free over-the-air digital video program service requirement?[51] With regard to ancillary or supplementary services for digital LPTV stations, what is the relevance of Section 336(b) of the Communications Act, which directs the Commission to limit such services to "avoid derogation of advanced television services, including high definition television broadcasts that the Commission may require using such frequencies?"[52]

B. Channel Assignments

26. Our rules permit analog LPTV and TV translator stations to operate on VHF TV channels 2–13 and UHF TV channels 14–69.[53] Stations in the LPTV service have always operated on these channels on a secondary non-interfering basis with respect to analog full-service television stations. They are also secondary to authorized DTV stations and certain land mobile radio service operations[54], including new primary auctioned services (*i.e.*, the services using the reallocated TV channels 52-69).[55]

27. Spectrum availability presents a great challenge to the digital conversion of TV translator and LPTV stations. The pace at which these stations begin to operate digitally may depend on the ability of station licensees to secure additional channels, which, in turn, will depend on the TV channels we make available for digital low power operations. As the DTV transition progresses, some TV translator and LPTV station licensees may choose to convert their existing analog stations to digital ("on-channel digital conversion"). Until DTV set penetration is sufficiently high in a served community, however, many, if not most, station operators may prefer to seek additional channels for digital operations. Our application processing experience indicates that it is becoming increasingly difficult for LPTV and

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[51] Section 143 of the Consolidated Appropriations Act, the *LPTV Pilot Project Digital Data Services Act* ("DDSA"), Pub L. No 106-554, 114 Stat. 4577 (Dec. 21, 2000), modified Section 336 of the Communications Act to add new subsection (h). The DDSA establishes a pilot project under which 12 specific LPTV stations and an additional station in Alaska to be chosen by the Commission, can provide one-way or two-way digital data services, portable or fixed, to demonstrate the feasibility of using LPTV stations to provide high-speed wireless digital data service, including interactive broadcast service and wireless Internet access. *See Implementation of LPTV Digital Data Services Pilot Project*, ("Implementation *Order*") 66 Fed. Reg. 29040 (May 29, 2001) as codified in 47 C.F.R. § 74.785; *Order on Reconsideration*, 17 FCC Rcd 2988 (2002). The Implementation *Order* provided a process for applying for pilot project authorizations. To date, no applications have been filed.

[52] 47 U.S.C. § 336(b)(2).

[53] 47 C.F.R. § 74.702. Stations are not authorized on TV channel 37, which is reserved for radio astronomy.

[54] 47 C.F.R. §§ 74.703, 74.709.

[55] The lower 700 MHz spectrum (channels 52-59) has been reallocated for new fixed, mobile, private and broadcast services. The upper 700 MHz spectrum has been reallocated for new commercial services (fixed, mobile, private, band manager and broadcast on channels 60-62 and 65-67) and public safety services (channels 63-64 and 68-69). *See Reallocation and Service Rules for the 698-746 Spectrum Band (Television Channels 52-59)*, 17 FCC Rcd 1022 (2001) (*Channel 52-59 reallocation order*) and *Reallocation of Television Channels 60-69, the 746-806 MHz band*, 12 FCC Rcd 22953 (1997) (*Channel 60-69 reallocation order*).

translator operators in many areas of the country to find additional channels.[56] Spectrum availability will become even more limited as more DTV stations begin broadcasting and new primary services begin to operate on the reallocated 700 MHz spectrum comprising TV channels 52–69. In this regard, we have begun to license public safety entities and new wireless users in the 700 MHz bands.

28. To facilitate digital service opportunities, we propose to make available for digital LPTV and translator stations VHF channels 2-13, inclusive, and UHF channels 14-59, inclusive (except channel 37). We propose the use of these channels for both on-channel analog to digital station conversions and for new digital LPTV and TV translator stations. These stations will be required to operate on a non-interfering basis to primary users of these channels and also protect earlier-authorized secondary users. Thus, digital LPTV and TV translator operations would not preclude or impede service from DTV stations or new primary services. We invite comment on these proposals.

29. In particular, we seek comment on our proposal to permit digital low power operations on TV channels 52-59.[57] In the *Channel 52-59 reallocation order*, the Commission permitted LPTV and TV translator stations to operate indefinitely on these channels on a non-interfering basis and to negotiate interference agreements with new primary service providers.[58] With regard to future filing windows, it retained "the discretion to geographically restrict or preclude altogether the filing of applications for new LPTV and TV translator stations seeking to operate on channels 52-69.[59] Although it may be appropriate to preclude or restrict the filing of additional applications for new analog LPTV and TV translator service on these channels, we believe the use of channels 52-59 would facilitate the digital conversion of existing low power service. These channels could also provide additional opportunities for new digital stations, particularly in rural areas where new wireless and other primary services may not operate in the near future. Alternatively, we seek comment on whether we should permit use of channels 52-59 only when applicants could demonstrate that no lower channels are available for their digital operations. Should such a policy apply only with regard to applications for new digital low power service or also include applications seeking to convert existing analog operations to digital?

30. We seek comment on whether TV channels 60–69 (746 MHz to 806 MHz) should be made available during the DTV transition for new digital LPTV and translator stations and/or digital conversions of existing analog stations.[60] In the *Channel 60-69 reallocation order*, the Commission decided that, in view of their secondary status, it would continue to authorize LPTV and TV translator service on these channels until the end of the DTV transition.[61] However, by statute, all TV broadcasters, including LPTV and translator stations, must vacate the use of this spectrum after the

[56] More than 2,000 "displacement relief" applications have been filed, which have sought replacement channels in order to resolve or avoid interference conflicts or to vacate the use of TV channels 52-69.

[57] Approximately 820 analog TV translator and LPTV stations are licensed to operate on these channels.

[58] *Channel 52-59 reallocation order*, paragraphs 14, 27 and 48.

[59] *Id.*

[60] Approximately 825 analog LPTV and TV translator stations are licensed to operate on these channels.

[61] *Channel 60-69 reallocation order*, ¶ 31.

transition ends in each TV market.[62] The Commission concluded that the statute left it no discretion in clearing LPTV and TV translator stations from the band at the end of the transition period.[63] Should digital LPTV and TV translator stations be authorized on these channels during the transition, considering the potentially limited time such stations could operate in this spectrum? If so, should we permit such authorizations only when applicants can demonstrate the lack of other available channels? Should we authorize digital low power service only on the channels that are not allocated for public safety operations?

C. Interference Protection

1. Protected Digital Translator and LPTV Service Contour

31. The service areas of analog LPTV and TV translator stations have always been defined in terms of protected signal contours. LPTV and TV translator stations are protected against interference from later-authorized LPTV and TV translator stations at the following contours: 62 dBu for stations on channels 2 through 6; 68 dBu for stations on channels 7 through 13; and 74 dBu for stations on channels 14 through 69.[64] These field strength values also define protected contours for analog Class A TV stations.

32. In the Class A TV proceeding, the Commission adopted the following protected signal contours for digital Class A stations: 43 dBu for channels 2 through 6, 48 dBu for channels 7 through 13, and 51 dBu for channels 14 through 51.[65] The Commission considered using the full-service DTV stations' "noise-limited" signal contours, which would have produced larger digital service areas than Class A stations' corresponding analog service areas,[66] but it chose protected contour values that

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[62] 47 U.S.C. § 336(e) ("Any person who holds a television broadcast license to operate between 746 and 806 MHz may not operate at that frequency after the date on which the digital television service transition period terminates, as determined by the Commission").

[63] *Id.*, ¶ 29.

[64] 47 C.F.R. § 74.707(a). Most LPTV and translator interference requirements limit the predicted strength of a station's signal at another station's protected service contour. The protected service contour is defined by the field strength value that is protected against interference. It encompasses the area within the locus of points where that field strength is predicted to occur. The contour-defining field strength, together with a station's power, antenna height and radiation pattern, and local terrain elevations, determine the geographic size and shape of the station's protected contour – calculated from the Commission signal propagation methods. Provided the contour-defining field strength is large enough to permit TV reception, a station's service area increases as that field strength is set to smaller values, in units of dBu. For example, for the same facilities and terrain and station environment, the DTV 41 dBu service contour for UHF channels yields a larger service area than the proposed 51 dBu service contour for digital LPTV and TV translator stations.

[65] *Establishment of a Class A Television Service*, 15 FCC Rcd 6355 (2000) ("*Class A Report and Order*"), ¶ 38. *See* also 47 C.F.R. § 73.6010.

[66] The service areas of DTV stations are bounded by the following noise-limited signal contours, calculated using the Commission's F(50,90) signal propagation curves: 28 dBu for channels 2-6, 36 dBu for channels 7-13 and 41 dBu for channels 14-69. *See* 47 C.F.R. § 73.622(e).

reflected the differences between analog LPTV and full-service TV station protected contours.[67] It reasoned that these values would yield digital Class A service areas comparable in size to stations' analog service areas. The adopted protected contours would also permit the operation of co-channel stations at closer distances, increasing opportunities for new digital Class A, LPTV and TV translator stations.[68]

33. We believe the rationale for selecting the digital Class A protected contour values also should be applicable to digital LPTV and TV translator stations. Class A TV stations started as LPTV stations and operate under the same effective radiated power limits and many of the same interference protection criteria as LPTV stations. Therefore, we propose the following protected signal contour values for digital LPTV and TV translator stations, as calculated from the F(50,90) propagation method in Section 73.625(b)(1) of our rules: 43 dBu for stations on channels 2 – 6, 48 dBu for stations on channels 7 – 13, and 51 dBu for stations on channels 14 – 69.[69] We seek comment on this proposal and on alternative protected signal contour values. In the Class A *Report and Order*, we stated that in a future proceeding we might revisit the above protected signal contours for digital Class A stations. At this time, we continue to believe these values are appropriate for digital Class A stations and seek comment in this regard.

2. Protection Standards and Methodology

a. Broadcast Station Protection

34. *Existing Analog Rules*. LPTV, TV translator and TV booster stations are secondary to and must not cause interference to the reception of "regularly used" signals of TV broadcast and DTV stations.[70] Absent agreements among affected parties, new LPTV, TV translator and TV booster stations must not interfere within the protected contour of existing LPTV, TV translator or Class A TV stations.[71] As a condition for application acceptance, proposed LPTV, TV translator and TV booster facilities must satisfy interference prediction criteria that depend on the nature of the station being protected and the channel relationship between the proposed and protected stations.[72] As the most common means of protection, predicted field strengths of a proposed station must not exceed values that would cause certain desired-to-undesired ("D/U") signal strength ratios to be exceeded at locations along another

[67] "For example, the analog LPTV and Grade B values for UHF stations are 74 dBu and 64 dBu, respectively, a 10 dB difference. This difference (or scaling factor) was added to the 41 dBu DTV noise-limited field strength value to obtain a protected contour of 51 dBu for UHF digital Class A stations." *Id.*, ¶ 38.

[68] *Id.*

[69] 47 C.F.R. § 73.625(b)(1). This rule specifies the procedure for determining F(50,90) field strength values from the Commission's F(50,50) and F(50,10) propagation curves.

[70] 47 C.F.R. § 74.703

[71] *Id.*

[72] 47 C.F.R. §§ 74.705, 74.706, 74.707, and 74.708 define requirements for the protection of TV broadcast stations, DTV stations, low power TV and TV translator stations, and Class A TV and digital Class A TV stations, respectively.

station's protected contour.[73] This method governs protection from proposed analog LPTV and TV translator stations to co-channel and adjacent channel TV, DTV, Class A, LPTV and TV translator stations; the threshold D/U ratios depend on the channel relationship.[74] Contour protection is also the method used to analyze potential interference to and from digital Class A station proposals, with the exception of the analysis of potential interference from digital Class A to DTV stations.[75]

35. Application acceptance standards for the LPTV and Class A services specify different methods for analyzing potential interference to DTV service. LPTV, TV translator and TV booster station proposals must protect the noise-limited signal contour of authorized co-channel and 1st adjacent channel DTV stations,[76] whereas analog and digital Class A facilities protect the service population within a DTV station's noise-limited contour.[77] Unlike DTV broadcast stations, Class A and digital Class A stations are not permitted to cause *de minimis* levels of DTV service population reduction other than a 0.5% rounding allowance.[78] The DTV protection requirements also differ in that LPTV and TV translator stations are required to protect only the service of authorized DTV facilities, those specified in

[73] A D/U ratio is the numerical difference (in dB) between the field strength values of a desired signal (D) and an undesired signal (U), calculated as D – U. The LPTV interference rules specify threshold D/U ratios that define predicted interference for various channel relationships. For example, LPTV protection of analog TV broadcast stations involves different threshold D/U ratios for the following channel relationships: co-channel, 1st adjacent channel, 14th adjacent channel and 15th adjacent channel. To illustrate, a D/U ratio of 28 dB is used to protect an analog co-channel UHF TV station where the proposed and protected stations specify different carrier frequency offsets. The predicted field strength of the proposed LPTV station must be at least 28 dB less than the protected 64 dBu field strength at points along the analog TV station's Grade B contour; that is, the predicted field strength cannot exceed 46 dBu (64 dBu – 28 dB) at the Grade B contour.

[74] For other channel relationships, LPTV and TV translator stations protect analog full-service TV stations on the basis of minimum station distance separations (*e.g.*, where the UHF channels of the proposed and protected stations are separated by 2, 3 or 4 channels).

[75] Digital Class A stations protect the service contours of analog full-service, Class A, LPTV and TV translator stations and other digital Class A stations by meeting the D/U ratios for "DTV-into-analog TV" specified in Section 73.623(c) of the Commission's Rules. *See* 47 C.F.R. §§ 73.6016, 73.73.6017 and 73.6019, respectively. Criteria for protection to digital Class A stations are given in Sections 73.6014 and 74.708.

[76] 47 C.F.R. § 74.706. The D/U protection ratios in this rule are also found in Section 73.623(c) of the DTV broadcast rules. Application proposals to locate analog LPTV or translator stations within the noise-limited contour of DTV stations operating on an adjacent channel must satisfy the required D/U ratio at all points within the DTV noise-limited contour.

[77] 47 C.F.R. § 73.6018. Applicants for TV and DTV facilities also use this approach to analyze potential interference to DTV service. Criteria for protecting DTV service populations are given in 47 C.F.R. §§ 73.622 and 73.623 and in OET Bulletin 69, Longley-Rice Methodology for Evaluating TV Coverage and Interference (July 2, 1997). *See* http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet69/oet69.pdf.

[78] In the DTV proceeding, we permitted DTV stations in the initial allotment table to decrease the populations served by NTSC TV and other DTV stations by no more than two percent, not to exceed a total population reduction from all stations of ten percent. Applicants seeking facilities modifications of full-service NTSC stations may not cause any additional interference to DTV service, other than a 0.5% reduction in service population to account for rounding and calculation tolerances. *See Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service* (*Memorandum and Order on Reconsideration of the Sixth Report and Order*), 13 FCC Rcd 7418 (1998).

station construction permits and licenses. Class A and digital Class A stations are required to protect the service populations resulting from authorized facilities and allotted DTV facilities, which may be different.[79]

36. *Discussion.* Interference standards, criteria and methods for digital LPTV and TV translator stations must balance facilitating spectrum opportunities for low power digital service and ensuring adequate protection to authorized broadcast service. With limited TV channel availability throughout much of the country, we wish to explore every means of maximizing channel use for digital LPTV and translator service. In so doing, we must also consider the interference protection rights of others, both full power and low power stations. A hallmark of the low power television service in its 20-year history has been the few reported cases of interference caused by LPTV and TV translator stations. We seek comment on protection standards and methods that will permit digital service opportunities and provide adequate safeguards against interference.

37. *Desired-to-Undesired ("D/U") Signal Strength Ratios.* We propose to base standards for accepting digital LPTV and TV translator station application proposals on D/U protection ratios for analysis of predicted interference to and from digital LPTV and TV translator stations.[80] D/U ratios provide an accurate basis for interference analyses.[81] D/U-based approaches also facilitate efficient spectrum use by permitting interference avoidance to be demonstrated through flexible system engineering (*e.g.*, by taking into account the signal attenuation characteristics of directional transmitting and receiving antennas and considering the entire transmission path from both the desired and undesired stations). The D/U ratios given in Section 73.623(c) of our rules were used in the construction of the DTV Allotment Table and are used in the analysis of DTV and TV broadcast station proposals.

38. We propose to apply to digital LPTV and translator interference analysis the co-channel D/U ratios for "DTV-into-analog TV," "Analog TV-into-DTV" and "DTV-into-DTV" given in Section 73.623(c)(2) and the DTV-to-DTV co-channel adjustment formula and analog-to-DTV co-channel adjustment table given in Section 73.623(c)(3).[82] We also propose to apply the "DTV-into-analog TV"

[79] Class A and digital Class A stations must also protect the "maximized" DTV service proposed in applications filed before December 31, 1999, or that were filed between December 31, 1999, and May 1, 2000, by a DTV station licensee or permittee that had notified the Commission by December 31, 1999, of its intent to maximize its facilities. *See* 47 U.S.C. § 336(f)(7)(A)(ii)(IV).

[80] In this proceeding we are not addressing the interference protection priorities, rights, and responsibilities of stations in the LPTV service, which are well established. Except as raised herein, the interference protection and remediation provisions in Sections 74.702 and 74.703 of our rules will apply equally to analog and digital LPTV and TV translator stations. Provisions regarding the secondary regulatory status of stations in the LPTV service are not at issue in this proceeding.

[81] Values for D/U protection ratios were determined from laboratory testing conducted during the DTV proceeding. These are based on the results of interference measurements for signals meeting the Commission's DTV transmission standard (*e.g.*, signals with the 8-VSB modulation method). Section 73.623(c) of our rules gives threshold D/U ratios for DTV protection of co-channel and first adjacent channel analog stations and for analog stations with the following additional ("taboo") channel relations to that of a DTV station: N-2, N+2, N-3, N+3, N-4, N+4, N-7, N+7, N-8, N+8, N+14, and N+15, where N is the analog TV channel. It also gives D/U ratios for DTV station protection of co-channel and first adjacent channel DTV stations and for analog station protection of co-channel and first adjacent channel DTV stations.

[82] This rule indicates that the specified D/U values for co-channel interference protection "are only valid at locations where the signal-to-noise ratio is 28 dB or greater for interference from DTV or 25 dB or greater for interference (continued....)

D/U ratios given for the following channel relationships: N-2, N+2, N-3, N+3, N-4, N+4, N-7, N+7, N-8, N+8, N+14 and N+15 (collectively, the "UHF taboo" channel relationships). The values of these UHF taboo ratios range from -24 dB to -43 dB, which indicate that a strong signal is required before interference is predicted. Because of the limited power levels at which digital LPTV and TV translator stations will be operating, we expect these requirements will have only a minimal impact on spectrum availability.[83] Yet, measurement studies indicate a potential for interference between stations operating with these channel relationships at locations where an undesired signal is substantially larger than the desired signal. We invite comment on our proposal to apply the digital-into-analog D/U ratios for taboo channels to digital LPTV and TV translator stations.

39. *First Adjacent Channel Ratios.* We propose that analog LPTV and TV translator station proposals protect 1st adjacent channel digital LPTV and TV translator stations based on the following D/U ratios, the values given in our DTV rules:[84]

"Lower analog TV-into-DTV"	-48 dB
"Upper analog TV-into-DTV"	-49 dB

We seek specific comment on alternatives to the D/U ratios in our DTV rules for digital LPTV and TV translator protection to 1st adjacent channel analog and digital stations.[85] An alternative has been suggested in a recent paper ("Sgrignoli Paper") of the effects of DTV transmitted "sideband splatter" into adjacent channel NTSC analog and DTV signals.[86] This study evaluates several out-of-band spectral emission masks and proposes two of these for digital TV translators – referred to as the "Simple" and "Stringent" masks.[87] In conjunction with use of these masks, the Sgrignoli Paper derives the following

(Continued from previous page)

from analog TV service. At the edge of the noise-limited service area, where the signal-to-noise (S/N) ratio is 16 dB, these values are 21 dB and 23 dB for interference from analog TV and DTV, respectively. At locations where the S/N ratio is greater than 16 dB, but less than 28 dB,..." the rule gives a formula for calculating D/U as a function of S/N; values range from 15-23 dB. The rule tabulates D/U values for analog-to-DTV co-channel interference ranging from 2-21 dB.

[83] Effective radiated power limits for digital stations in the LPTV service are 300 watts for stations that will operate on channels 2 - 13 and 15 kW for stations on channels 14 - 69.

[84] 47 C.F.R. § 73.623(c)(2).

[85] *Id.* The ratios are:

Lower DTV-into-analog TV	-14 dB
Upper DTV-into-analog TV	-17 dB
Lower DTV-into-DTV"	-28 dB
Upper DTV-into-DTV"	-26 dB

[86] "DTV Repeater Emission Mask Analysis," Gary Sgrignoli, *IEEE Transactions on Broadcasting*, March 2003, Volume 49, Number 1, Pages 32-80, ISSN 0018-9316. ("Sgrignoli Paper"). The Sgrignoli Paper is also available at the following Internet site: www.zenith.com/digitalbroadcast/downloads/DTV Emission Mask Analysis.pdf. The term "splatter" refers to emissions, such as intermodulation products, that are manifested as co-channel interference to a receiver tuned to an adjacent channel.

[87] *See* below the discussion of digital LPTV and TV translator emission masks under the section heading "Other Technical Issues." For example, the "simple" mask attenuates emissions more than 6 MHz from the edge of a TV channel by 71 dB below the average transmitted power, and the "stringent" mask attenuates by 76 dB at and beyond 3 MHz from the channel edge. By comparison, the emission mask required for DTV stations specifies an attenuation of 110 dB at and beyond 6 MHz from the channel edge. *See* 47 C.F.R. § 73.622(g).

D/U ratios to protect against sideband splatter, which it states is the predominant cause of adjacent channel interference into analog NTSC or digital signals:[88]

Emission Mask	DTV-into Analog NTSC	DTV-into-DTV
"Simple"	10 dB	- 7 dB
"Stringent"	0 dB	-12 dB

The more restrictive D/U ratios are associated with the less restrictive emission mask. The above ratios are more restrictive than those given in Section 73.623(c), but also correspond to emission masks that are less stringent than the full-service DTV mask. It is likely that many LPTV and TV translator operators will seek to co-locate digital transmission facilities at sites used to transmit analog and other digital signals on first adjacent channels. Because of spectrum limitations, it is also likely that digital output signals may be adjacent to analog or digital input signals in a translator system. Sideband splatter from transmissions on adjacent channels cannot be filtered at viewers' receivers or the receiver portions of TV translators. It can only be limited through transmitter linearity and/or output filtering. Adequate first adjacent channel D/U ratios would be particularly important in such situations.

40. We seek comment on D/U ratios for 1st adjacent channel protection from digital TV translators and LPTV stations. Should the D/U ratios and any related emission masks adopted for digital LPTV and translator stations be applied to digital Class A TV stations?[89] Commenters should also consider the processing implications of multiple emission masks and related D/U ratios. Would it unduly complicate the record-keeping and interference analysis if applicants are required to specify one of multiple mask options in their applications, which would become a term of a station's construction permit and license authorizations? We tentatively conclude that stations seeking to change their mask would be required to file a minor change application to modify their authorization.

41. *Interference Prediction Methodology.* In this proceeding we will adopt a methodology for interference analysis to be used in the application process for accepting digital LPTV and TV translator applications. One possible choice would be the contour protection approach now used to evaluate analog LPTV and TV translator station proposals.[90] This methodology is familiar to LPTV and translator operators and their engineering consultants. It is "tried and tested" and has resulted in very little reported interference to over-the-air broadcast reception. It could readily be adapted for digital interference analysis by substituting digital D/U ratios and signal propagation formulations.[91]

42. The contour protection approach, however, has shortcomings that could result in fewer opportunities for digital LPTV and TV translator service. First, the existing methodology does not fully

[88] Sgrignoli Paper at p. 78, Summary and Conclusion. The study determines the D/U ratios at Thresholds of Visibility and Audibility.

[89] Digital Class A stations are subject to the adjacent channel D/U ratios given in the DTV rules.

[90] 47 C.F.R. §§ 74.705, 74.706, 74.707, 74.708. Minimum station separation distances given in Section 74.705 would not apply to protection from digital LPTV and TV translator stations.

[91] If the contour protection were to be adopted, we propose that the Commission's F(50,90) propagation method replace the F(50,50) curves to determine distances to the protected contours of digital stations, and that F(50,10) curves be used to locate all digital interference contours. *See* 47 C.F.R. § 73.625(b).

consider the effects of terrain on signal propagation. It includes only those terrain elevations within 3 – 16 km from the proposed facility under study, averaging these elevations to determine a station's antenna "height above average terrain" along a signal propagation path. This approach can lead to erroneous predictions of interference on propagation paths where the terrain more than 16 km from the transmitter site differs from the average terrain 3 to 16 km from the transmitter site. Second, it does not account for signals being significantly attenuated or blocked by terrain obstructions. Third, the contour protection method checks for predicted interference only along the perimeter of the service area of a protected station. It does not consider locations inside the protected contour where interference might occur, even when the locations along the contour are protected (*e.g.*, at elevated locations within the protected contour). Fourth, the existing contour protection method does not consider the effects of interference predicted from other stations (interference "masking"). A proposed LPTV or translator facility would fail an interference study if it were predicted to interfere at a location along a station's protected contour. It would make no difference if interference from an existing station was also predicted at that location. Finally, the existing contour method does not account for the directional signal attenuation characteristics of outdoor receiving antennas, nor does it make any allowance for signal attenuation characteristics of transmitting antennas in the vertical plane.

43. As an alternative to the contour overlap approach, we could base application acceptance on our DTV interference prediction methodology.[92] The LPTV rules permit applicants to use the Longley-Rice propagation methods described in OET Bulletin 69 to support requests for waiver of the contour protection and other LPTV interference rules.[93] Also, the DTV methodology is used in the Class A TV service to protect the service populations resulting from authorized and allotted DTV facilities.[94]

44. The shortcomings of the contour protection method are not present in the DTV interference model. The DTV model incorporates the Longley-Rice propagation model, which considers the effects of terrain elevations along entire propagation paths from transmitting to receiving locations. The model partitions the area within the DTV noise-limited contour into small cells. Each cell is examined to determine if noise-limited service is attainable, or if service to the population in a particular cell is precluded by terrain obstructions. The DTV model then checks to determine whether service at a cell would be prevented by masking interference from another station. In checking for interference, the DTV model assumes an outdoor antenna at receiving locations, pointed toward the desired station and having a directional pattern and "front-to-back" ratio.[95] The model checks the remaining served cells for predicted interference from the proposed facility under study.

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[92] The DTV interference model is based on service area and interference provisions given in Sections 73.622 and 73.623 of our rules and additional engineering criteria given in OET Bulletin 69. OET Bulletin, "Longley-Rice Methodology for Evaluating TV Coverage and Interference (July 2, 1997), available at FCC Internet address http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet69/oet69.pdf.

[93] *See, e.g.*, 47 C.F.R. § 74.705(e).

[94] Class A station proposals are not permitted to decrease the predicted service populations of DTV stations and allotted facilities by more than 0.5%, an allowance for rounding and computer platform tolerance.

[95] OET Bulletin 69 at pages 8-10. The front-to-back ratio is a measure (in dB) of an antenna's ability to suppress unwanted signals arriving from "behind" the antenna. It is calculated by subtracting the antenna's rearward gain from its forward gain, where these directions are 180 degrees apart. The antenna's radiation pattern determines the extent of attenuation from signals received off-axis.

45. In the 1997 DTV *Sixth Report and Order*, the Commission stated that in a future proceeding it would consider changing the LPTV and TV translator application acceptance criteria to reflect the DTV service approach "after we have gained practical experience with these techniques and have upgraded our application processing software accordingly."[96] We are now in a position to consider such methodology for digital LPTV and TV translator applications. Our DTV prediction methods and computer model have been used for several years in the processing of applications for DTV and NTSC TV facilities. They have also been upgraded and used extensively to evaluate requests by LPTV and TV translator applicants to waive the contour protection standards. Our processing experience suggests that engineering consultants are prepared to use the DTV interference prediction methods to seek available channels for digital TV translator and LPTV operations.

46. We seek comment on whether we should adopt a version of the DTV methodology for digital LPTV and TV translator interference analysis. The DTV methods provide more comprehensive, accurate and realistic analyses than the contour protection method currently used for the LPTV service. Given these advantages and the DTV model's wide-spread use, we are inclined to prefer the DTV methodology over the contour protection method as the basis for accepting digital LPTV and TV translator applications. Alternatively, should we continue to use the contour protection method with allowance for Longley-Rice and OET 69-type methods on a waiver basis? Are there other methods we should consider (*e.g.*, a contour protection method using the Longley-Rice propagation model)?

47. If we were to apply the DTV methodology to digital LPTV and TV translator interference analyses, it may be necessary to tailor the DTV prediction model. We have become aware that using the standard vertical antenna pattern assumed in OET Bulletin 69 for analysis of digital and analog LPTV and TV translator stations could under-predict their service and interference potential. Specifically, the assumed transmitting antenna vertical plane radiation patterns are set forth in Table 8 of OET Bulletin 69. Different patterns are depicted depending on the frequency band of the channel being considered and whether the station is analog or digital. These patterns are all based on antennas typically used by full-service TV stations, employing a moderate amount of electrical beam tilt (0.75 degrees) and a relatively high gain in the main lobe. Such antennas allow full-service TV and DTV stations to direct more power outward toward the edge of the stations' service areas and less power downward toward locations relatively closer to the stations' towers (where a small percentage of the maximum radiated power produces a signal that is strong enough for good reception because the receiving locations are so close to the transmitting antenna). Typically, LPTV and TV translator stations use transmitting antennas with less gain and more beam tilt because such antennas are less expensive, smaller and lighter, and transmit a larger proportion of the stations' limited power downward toward the close-in locations these stations want to serve. These antennas generally have broader vertical radiation attenuation characteristics than the values given in Table 8 (*i.e.*, numerically larger relative field strengths for the corresponding vertical angles, particularly for UHF antennas). Further, TV translator stations are typically sited at high elevations (hills or mountain slopes) and commonly employ electrical antenna beam tilt or combinations of mechanical and electrical tilt to maximize their signal down into the served communities.

48. To illustrate the concern, based on the Table 8 antenna pattern, an LPTV station in the UHF band with a maximum effective radiated power of 10 kilowatts (kW) would have only 121 watts (0.121 kW) assumed downward power toward locations more than 6 degrees below the horizontal plane from the antenna. Applying the full-service antenna assumption could result in areas close to the LPTV

[96] *See Advanced Television Systems and Their Impact upon the Existing Television Broadcast Services*, 12 FCC Rcd (1997), ¶ 145.

or TV translator stations' towers that would not be predicted to be served by those stations. In many cases, stations have chosen transmitter sites situated at a high elevation with respect to the served community, but located several miles from the site. In some situations of this nature, the DTV model has predicted service areas located very close to the transmitter that exclude the community that is being served. If service is not predicted, protection from interference is not afforded. In addition, studies using the full-service antenna assumption could under-predict the interference impact to other LPTV and translator stations as well as to full-service analog and DTV stations on adjacent channels (including "taboo" related channels for analog stations). Accordingly, we seek comment on appropriate departures from the OET Bulletin 69 analysis to model more accurately the transmitting antennas normally used by LPTV and TV translator stations. We believe that incorporating antenna beam tilt into our LPTV software implementation of OET Bulletin 69 would help to alleviate the above concern. We seek comment on the extent of antenna beam tilting by LPTV and translator stations and its importance as an input to the interference prediction model.

49. If we were to adopt the DTV methods for digital stations in the LPTV service, should we also adopt their use for analog LPTV and translator application acceptance studies? Certain standards for protecting NTSC TV broadcast stations from analog LPTV and TV translator station proposals are based on minimum distance separations.[97] Should these be unaffected by a change from the contour to the DTV interference prediction methodology? Should interference standards and methodology adopted for the digital or analog LPTV service also be extended to the Class A TV service?

50. *Interference Agreements*. Interference agreements are permitted among LPTV and TV translator station applicants, permittees and licensees. Class A TV stations may also negotiate interference agreements with applicants for or licensees or permittees of authorized LPTV and translator stations.[98] Such agreements may supercede compliance with the LPTV interference protection standards. Additionally, applications for LPTV and translator facilities predicted to interfere with full-service stations may be granted with the written consent of the affected stations. The consent of a full-service station does not obviate the responsibility of the LPTV or translator station to eliminate interference caused to over-the-air reception of the full-service station, wherever its signal is regularly viewed. We propose to apply all of these provisions to digital LPTV and TV translator stations. We seek comment on this proposal.

51. *Co-located Operation on Adjacent Channels*. The analog LPTV contour protection standards stipulate that an application for a new or modified LPTV or TV translator station will not be accepted if the proposed transmitting antenna site lies within the protected contour of an adjacent channel station.[99] Applicants may support requests to waive this rule by showing that the applicable D/U

[97] *See* 47 C.F.R. § 74.705.

[98] 47 C.F.R. §§ 74.703(a), 73.6022.

[99] 47 C.F.R. § 74.705(b) prohibits locating the antenna site inside the protected contour of TV broadcast station on a 1st adjacent channel or the 14th or 15th channel above that of the TV station. Sections 74.707(b) and 74.708(c) of our rules prohibit locating the antenna site inside the protected contours of 1st adjacent channel LPTV, TV translator or Class A TV stations.

protection ratios would not be exceeded within the co-located stations' protected contour.[100]

52. In the DTV proceeding, the Commission sought ways to assist channel-displaced LPTV and TV translator operators in securing replacement channels. The Commission stated that it would consider requests to waive its LPTV protection standards where applicants could demonstrate that station proposals would not cause any new interference. In this regard, the Commission agreed with commenters that co-locating with adjacent channel NTSC and DTV facilities may prove vital for the survival for some LPTV stations.[101] The Commission concluded that it would entertain waiver requests for LPTV and TV translator stations proposing co-located or nearly co-located facilities to those of analog TV stations operating on the first adjacent channel above or below, or the fourteenth adjacent channel below, provided applicable D/U protection ratios were not exceeded at locations within the TV station's protected contour where the station was regularly viewed.[102]

53. Co-located station operations on adjacent channels may offer one of the most promising opportunities for identifying available channels for digital TV translator and LPTV service. Such co-location could especially benefit TV translator operators whose installations use two-channel spacing (*e.g.*, channels 40, 42, 44, 46 and 48). With careful engineering and sufficient attenuation of out-of-channel emissions, it may be possible to interleave digital channels between the analog channels without causing interference to reception of the analog translator output channels.[103]

54. Our consideration of co-located operations on adjacent channels may depend on the interference prediction methodology we adopt in this proceeding. The DTV methodology, as described in OET Bulletin 69, permits interference analysis of such operations (*i.e.*, it calculates the D/U ratios from the signals of a protected station and a proposed co-located station on an adjacent channel at locations in the protected service area). Therefore, under this methodology, a waiver of the LPTV interference rules would not be necessary. Under the existing contour protection method, considering co-located adjacent channel operations on a waiver basis would seem to be appropriate because this method does not include D/U calculations at locations inside a protected contour, where interference might otherwise be predicted. In any event, we also propose to consider permitting co-located adjacent operations on the basis of written agreements among the affected parties.

55. We seek comment on our proposals and on issues related to co-located adjacent channel operations involving digital LPTV and TV translator stations.[104] Should we consider co-located

[100] For example, the D/U ratio for 1st adjacent channel protection is -15 dB (*i.e.*, the strength of the undesired signal at any location inside the protected contour can be as much as 15 dB higher than that of the desired signal before interference is predicted).

[101] DTV *Sixth Report and Order*, ¶ 146.

[102] *Id.* Stations operating within the same antenna farm are an example of "nearly co-located" stations. The Commission indicated that until it had gained experience with near co-located operations, it was inclined to limit such waivers to applications from channel-displaced stations.

[103] For example, this could be achieved by multiplexing adjacent channels through the same antenna and sufficiently balancing the radiated power levels.

[104] In this regard, adjacent channels are taken to include the 1st adjacent channel to DTV and NTSC analog TV and the following channel relationships between digital and NTSC analog TV channels, where N is the analog channel: N-2, N+2, N-3, N+3, N-4, N+4, N-7, N+7, N-8, N+8, N+14, N+15.

transmitting antennas to be only those located on the same tower or other supporting structure or, alternatively, on structures located within a particular proximity? Should we limit consideration of co-located adjacent channel digital operations by requiring that it be done on a waiver basis?[105] If so, should such a waiver policy be required for co-location with any class of adjacent channel station, including co-located facilities only of LPTV and/or TV translator stations?

56. We seek comment on whether we should apply in the low power TV service a provision similar to that in Section 73.622(g) of our DTV rules. In pertinent part, Section 73.622(g)(2) provides that "where a low power television station or TV translator station is operating on the lower adjacent channel within 32 km of the DTV station and notifies the DTV station that it intends to minimize interference by precisely maintaining its carrier frequencies, the DTV station shall cooperate in locking its carrier frequency to a common reference frequency and shall be responsible for any costs relating to is own transmission system in complying with this provision." DTV broadcasters are required to maintain a precise frequency separation between their 8VSB pilot frequency and the visual carrier frequency of a lower adjacent channel NTSC TV station located within 88 km of the DTV station. To maintain this separation, the two stations are required to lock these frequencies to a common reference frequency.[106] Considering the lower power levels of stations in the LPTV service, is there a need to apply this requirement among digital and lower 1st adjacent channel analog LPTV and TV translator stations within some geographic proximity?[107]

57. Finally, we seek comment on any other technical means for demonstrating interference avoidance that could facilitate channel availability for digital LPTV and TV translator service without compromising the interference protection rights of other stations. We also seek comment on other changes to our LPTV service interference protection rules that could provide additional spectrum opportunities without unduly risking impermissible interference. For example, should we require all analog LPTV and TV translator stations to operate with a frequency offset?[108] Carrier offsetting permits two co-channel stations with different offsets to operate closer to each other with no additional interference potential than if one or both of the stations operated without a carrier offset or the stations

[105] Interference analyses of co-located adjacent channel facilities require predictions of the strengths of desired and undesired signals at locations close to the antenna site. As discussed above, we are concerned that, in our DTV methodology for application processing, the assumed vertical patterns may not adequately reflect the patterns of antennas typically used at LPTV and TV translator facilities. Thus, our consideration of co-located adjacent channel digital LPTV and TV translator station proposals on a non-waiver basis may require modification of our LPTV processing software with respect to the assumed vertical relative field strength values, or may require other consideration of proposed antennas' vertical pattern and beam tilt characteristics.

[106] This requirement stems from tests conducted during the DTV proceeding that found artifacts in the NTSC signal ascribed to the "beating" of the DTV pilot and NTSC visual carrier and color subcarrier frequencies. It was found that precise offsets between these frequencies eliminated the artifacts.

[107] Such a requirement, if adopted, could apply only to digital stations transmitting a VSB pilot carrier frequency.

[108] Frequency offsetting involves shifting the visual carrier frequency from its nominal position of 1.25 MHz from the lower edge of a TV channel. Standard offsets are 10 kHz above the nominal frequency (plus offset), 10 kHz below (minus offset) or no shift (zero offset).

used the same offset.[109] Analog Class A TV stations are required to operate with a frequency offset.

b. Protection of Land Mobile Radio and Other Primary Services

58. LPTV and TV translator stations are authorized on a secondary non-interfering basis to existing land mobile operations and certain other primary services. These include public safety and other new wireless services that are operating or will operate in the spectrum comprising TV channels 52 – 69.[110] With regard to digital LPTV and TV translator operations, we do not propose to alter the interference priorities and remediation provisions identified in Section 74.703 of our rules.

59. Section 74.709 specifies criteria for protecting land mobile radio operations on TV channels 14-20 in the vicinity of 13 large cities. Generally, an application for a new or modified LPTV or TV translator facility will not be accepted if it proposes (1) a transmitting antenna site on a co-channel or first adjacent channel within 130 km of these cities, or (2) the proposed LPTV or translator facilities would produce a field strength exceeding 52 dBu at the protected contour (generally extending the 130-km distance) of a co-channel land mobile assignment or 76 dBu at the protected contour of a first-adjacent channel land mobile assignment.[111] We request comment on the suitability of these protection requirements for digital LPTV, TV translator, and Class A TV stations.[112] Are the above protection criteria appropriate for this purpose? If not, what criteria should be applied and on what basis?

60. The National Telecommunications and Information Administration ("NTIA") has requested that we ensure that digital LPTV, Class A, TV translator, and TV booster stations do not impact operations at radio astronomy, research, and certain receiving installations such as FCC monitoring stations and the Department of Commerce's *radio receiving zone* on Table Mountain, Boulder County, Colorado.[113] NTIA specifically requests that we subject digital low power television stations to Section 73.1030 of our rules, which requires that applicants for authority to construct a new station in the vicinity of those installations notify the affected installation(s) and give consideration to

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[109] This is because the required co-channel D/U of 45 dB for non-offset operations is reduced to 28 dB for stations operating with different carrier offsets.

[110] In addition, pursuant to 47 C.F.R. § 74.703(d), LPTV and translator stations must not interfere with reception at a cable TV headend or output channel of a cable TV, MDS, or ITFS system converter, if the cable, MDS or ITFS operator is the "earlier user." Also, to protect stations in the Off-Shore Radio Service, an application for a new LPTV and TV translator station to use channels 15, 16, 17 and 18 will not be accepted if it proposes a site located within a specified area near the Gulf of Mexico. 47 C.F.R. § 74.709(e).

[111] 47 C.F.R. § 74.709(a)-(d). These provisions also apply to Class A TV stations.

[112] The reference in the Class A rules to Section 74.709 does not explicitly address interference protection requirements for proposed digital Class A TV stations.

[113] *See* letter of July 30, 2003, from Frederick R. Wentland, Associate Administrator, NTIA Office of Spectrum Management, to Edmond J. Thomas, Chief, FCC Office of Engineering and Technology (NTIA letter). The Federal Communications Commission administers non-Federal Government spectrum; NTIA, which is an operating unit of the Department of Commerce, administers Federal Government spectrum. *See* 47 C.F.R. § 2.105(a). Section 305(a) of the Communications Act of 1934, as amended, authorizes the President to assign frequencies to Federal Government stations. This authority has been assigned to the Assistant Secretary of Commerce for Communications and Information, who also serves as the administrator for NTIA. *See* Pub. Law 102-538, 106 Stat. 3533 (1992).

providing protection to the installation(s) against interference.[114] We therefore propose to subject LPTV, Class A, TV translator and TV booster digital stations to the requirements of Section 73.1030. We also request comment on whether it might be appropriate to subject digital low power television stations to those requirements only with regard to the more sensitive operations of the radio astronomy observatories at Green Bank, West Virginia and Arecibo, Puerto Rico. In this regard, we also observe that digital low power television stations will operate with much lower ERP than full service DTV stations (*i.e.*, maximum ERP of 300 kW for VHF stations and 15 kW for UHF stations), and therefore would appear to pose less of a concern for radio receiving sites and FCC monitoring stations.

D. Other Technical Issues

1. Power Limits

61. In the DTV proceeding, the Commission established the following effective radiated power ("ERP") limits for analog and digital LPTV and TV translator stations:[115]

Channels	Analog ERP (Peak)	Digital ERP (Average)
2 – 13	3 kW	300 watts
14 – 69	150 kW	15 kW

The digital ERP limits were set to values 10 dB below the corresponding analog ERP limits.[116] As noted, the combination of a station's protected contour value and its effective radiated power affects the size of the station's service area. Assuming we adopt the contour values we have proposed for digital LPTV and TV translator stations,[117] we invite comment on the adequacy of the above digital effective radiated power limits. Are these limits generally appropriate for coverage of the communities and areas served by LPTV and TV translator stations, based on typical receiving installations and proximity of transmitting sites to the served communities? If not, how should the limits be changed and on what basis? [118]

2. Out-of-Channel Emission Limits

62. The term "emission mask" describes required levels of signal attenuation below a reference power value at specified frequency intervals outside of the bandwidth of an assigned channel. Unless sufficiently attenuated, out-of-channel emissions could cause co-channel interference to signals received in an adjacent channel. The Sgrignoli Paper highlights the importance of the emission mask and its role

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[114] 47 C.F.R. § 73.1030.

[115] *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Services,* 12 FCC Rcd (1997), ¶ 147; *see also* 47 C.F.R. § 74.735.

[116] Field test results during the DTV proceeding suggested that approximately comparable service areas are produced by a digital "average" ERP level about 12 dB below an NTSC "peak" ERP level.

[117] 43 dBu for stations on channels 2 – 6, 48 dBu for stations on channels 7 – 13, and 51 dBu for stations on channels 14 – 69.

[118] In the Class A proceeding, we declined a request to increase the ERP limits, noting that to do so could "hinder the implementation of digital television as well as limit the number of Class A stations that could be authorized." *Establishment of a Class A Television Service*, 16 FCC Rcd at 8256, ¶ 32 (2001).

for digital LPTV and TV translator stations:

> "The amount of acceptable adjacent channel splatter must be determined and limited in practice for both full-service and low power facilities in order to achieve optimum allocation of TV channels in the shrinking television spectrum. Adjacent channel splatter reduction is usually accomplished by controlling transmitter power and linearity as well as with band-pass filtering at the final output, while still providing acceptable in-band signal quality. However, the fact that translator and low power transmitters radiate so little power relative to full-service stations may allow less stringent and less costly emissions masks, which is especially important in light of the typical financial status of low power facilities."[119]

63. Our rules specify emission masks for most communications services, including radio and television broadcasting. Emission masks for analog LPTV, TV translator and TV booster stations are specified in Section 74.736 of the rules. These require that emissions on frequencies greater than 3 MHz from the edges of the assigned channel be attenuated no less than:

(a) 30 dB for transmitters rated at no more than 1 watt power output
(b) 50 dB for transmitters rated between 1 watt and 100 watts power output
(c) 60 dB for transmitters rated at more than 100 watts power output

The DTV broadcast emission mask requires the following attenuation below the average transmitted power: (1) 47 dB in the first 500 kHz from the authorized channel edge, (2) 110 dB at frequencies more than 6 MHz from the channel edge, and (3) at any frequency between 500 kHz and 6 MHz from the channel edge, emissions must be attenuated no less than the value determined by the formula $A = -11.5 (\Delta f + 3.6)$, where A is the attenuation in dB and Δf is the frequency difference in MHz from the edge of the channel.[120]

64. We invite comment on the appropriate emission mask(s) for digital LPTV and TV translator stations.[121] We seek a mask(s) that would enable sufficient interference protection to and from these stations, taking into account their power levels and the typical nature of their operations. Also, we do not wish to burden station licensees with mask requirements that would be unduly costly. We agree that cost of compliance is an important consideration to the many station licensees that operate on limited budgets. Initially, we believe the DTV broadcast mask may be unnecessarily restrictive and too costly for digital LPTV and TV translator stations.

65. An alternative to the full-service DTV broadcast emission mask is offered in the Sgrignoli Paper, which analyzes the impact of sideband splatter on adjacent channel NTSC and DTV signals. The paper suggests two digital emission masks, a "Stringent Mask" and a "Simple Mask," each with its own associated required adjacent channel D/U ratios. The paper uses as a reference the above-described mask given in our DTV rules. The suggested masks are described below, where A (dB) is the attenuated

[119] Sgrignoli Paper, Abstract.

[120] 47 C.F.R. §73.622(h). All attenuation limits are based on a uniform measurement bandwidth of 500 kHz. If other measurement bandwidths are used, suitable adjustments in the calculated attenuation values must be made.

[121] We also invite comment on a spectral emission mask for digital on-channel booster stations, in the event we adopt this station class for the LPTV service.

emission level below the average transmitted power of a DTV channel and Δf is the frequency difference in MHz from the edge of the channel:[122]

Stringent Mask

A (dB) = 47 dB	from Δf = 0.0 MHz to 0.5 MHz
A (dB) = 11.5 * (Δf + 3.6) = 47 + 11.5* (Δf – 0.5)	from Δf = 0.5 MHz to 3.0 MHz
A (dB) = 76 dB	everywhere else

This mask is the same as the DTV mask except that it "flattens out" with a required attenuation of 76 dB beyond the midpoint of the adjacent channel. For comparison, the DTV mask flattens out at 110 dB attenuation at the far edge of the adjacent channel.

Simple Mask

A (dB) = 46 + (Δf^2 /1.44)	from Δf = 0.0 MHz to 6.0 MHz
A (dB) = 71 dB	everywhere else

66. According to the Sgrignoli Paper, the Simple Mask "allows simple and cost-effective translator implementation" and the Stringent Mask "still allows a reasonably cost effective implementation but allows larger D/U ratios between interfering signals and thus is more efficient for spectrum utilization in crowded regions."[123] Both masks are crafted to work in tandem with adjacent channel D/U ratios and are therefore independent of transmitter power.[124] The paper also analyzes the extent of transmission filtering necessary for compliance with these masks, concluding that five-section and three-section filtering would suffice for the Stringent and Simple masks, respectively.

67. With regard to interference avoidance, the Sgrignoli Paper establishes a relationship between permissible levels of out-of-channel "splatter" emissions and the adjacent channel D/U ratio. It suggests D/U ratios needed to overcome the amount of splatter permitted by the masks (*e.g.*, for the interference threshold of visibility). We seek comment on the two emission masks and resulting adjacent channel D/U ratios suggested in the Sgrignoli Paper. We request comment from equipment manufacturers and other knowledgeable parties on the associated costs to licensees.

68. NTIA has also expressed concern for the potential for harmonic emissions from digital low power television operations to radio navigation satellite service (RNSS) operations within the 1559-1610 MHz, 1215-1240 MHz, and 1164-1188 MHz bands.[125] For example, NTIA notes that the third harmonic

[122] Sgrignoli Paper, *IEEE Transactions on Broadcasting*, March 2003, Volume 49, Number 1, at pp. 48-49. As acknowledged by the Sgrignoli Paper, these masks were developed by the FCC staff and adopted by the Commission in the DTV *Sixth Report and Order*, 12 FCC Rcd 14588 (1997) (Simple Mask) and the *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order*, 13 FCC Rcd 7418 (1998) (Stringent Mask). The Sgrignoli Paper truncates the attenuation required by the Stringent Mask at 3 MHz into the adjacent channel, thereby resulting in a maximum attenuation requirement of 76 dB.

[123] Sgrignoli Paper at p. 77, Summary and Conclusion.

[124] *See also* the discussion of first adjacent channel D/U protection ratios in the above discussion of interference protection standards.

[125] *See* NTIA letter, *supra*.

of TV channel 23 signals at 525.14 MHz is 1575.42 MHz, which is the center frequency of the Global Positioning Satellite L1 signal.[126] We request comment on whether the two out-of-band emissions masks discussed above are adequate to limit digital low power television harmonic signals in the 1559-1610 MHz, 1215-1240 MHz, and 1164-1188 MHz bands to levels necessary to protect service to aeronautical and ground-based RNSS receivers.

69. More generally, we invite comment on the role of emission masks for digital LPTV and TV translator stations. Is there a need for multiple masks with differing performance requirements and costs? We believe that the amount of attenuation of out-of-channel emissions could vary with a stations' environment. A stricter mask might be needed to avoid adjacent channel interference in a crowded TV environment (*e.g.*, a TV translator installation using adjacent output channels or adjacent output and input channels). Other TV translators or LPTV stations might be located in areas where adjacent channel interference is not a problem and a less restrictive emission mask would suffice. If we were to adopt multiple emission masks, should we prescribe in our rules those situations requiring a more restrictive mask or should the choice be left to applicants for digital stations? Should the emission mask(s) adopted for the digital or analog LPTV service also be extended to digital stations in the Class A TV service?

70. We invite comment on alternative formulations for digital LPTV and TV translator emission masks and related permissible levels of out-of-channel emissions. We ask commenters to provide the technical basis for such formulations and, to the extent possible, the estimated cost of compliance. We are concerned that any out-of-channel emission requirements we adopt in this proceeding not be unduly costly to translator and LPTV station operators, or unnecessarily penalize stations operating at relatively low power levels. In this regard, we note that our rules for certain services specify absolute levels of emission, expressed by the following formulation: A + 10 log P, where "A" could represent the minimum level of signal attenuation (in dB) over some frequency interval below the average digital power in the channel ("P").[127] Finally, we propose to specify a resolution bandwidth value of 500 kHz for determining compliance with out-of-channel emission limits, the value specified in our DTV rules, and request comment on this proposal.

3. Other Transmission System Facilities Issues

71. Generally, stations in the LPTV service must operate with a transmitter or translator that the Commission has "certificated for licensing."[128] Certification is an equipment authorization "based on representations and test data submitted by the applicant," normally the equipment manufacturer, to the Commission.[129] It provides one means for ensuring that radio frequency transmitting equipment complies with the Commission's technical standards. LPTV service equipment standards primarily relate to interference avoidance. To a lesser extent, they involve the satisfactory reception of transmitted signals by the public. We seek to establish the minimally necessary standards for the transmitting equipment that will be used for digital low power operations and the process for addressing compliance with these standards.

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[126] The full TV channel 23 signal occupies the frequency band 524-530 MHz.

[127] For example, this type of formulation specifies part of the emission mask for FM broadcast stations. 47 C.F.R. § 73.317(d).

[128] 47 C.F.R. § 74.750(a).

[129] 47 C.F.R. § 2.907(a). The particulars for applications for certification are given in Section 2.1033.

72. *Equipment Standards Related to Signal Reception and Technical Quality.* When the Commission proposed the analog low power TV service, it expressed its view on the role of transmission standards:

> "We are concerned primarily with maintaining those standards necessary for the prevention of objectionable interference. Additional standards that are calculated to maintain a first-rate quality of signal into the home appear to us neither necessary or desirable. Rigorous standards may preclude the service altogether in some instances, and we have every confidence that the operator will attempt to make his or her use attractive to viewers."[130]

Thus, our rules for analog stations in the LPTV service do not include detailed signal quality standards for transmitting equipment. Rather, LPTV and TV translator stations are expected to transmit signals that can be received by the public. For example, with regard to locally inserted messages, the rules stipulate that "the apparatus used to generate the local signal which is used to modulate the translator or low power station must be capable of producing a visual or aural signal or both which will provide acceptable reception on television receivers designed for the transmission standards employed by TV broadcast stations."[131] As a criterion for Commission certification of translators, "the equipment shall be so designed that the electrical characteristics of a standard television signal introduced into the input terminals will be maintained at the output."[132]

73. Consistent with this emphasis on general functionality, we do not propose signal quality-related standards for digital translator and LPTV transmitting equipment.[133] In considering permissible use for digital translators, we stated our expectation that a translator should be capable of rebroadcasting ("passing through") the signal of a DTV broadcast station and that the translator output signal should be viewable on a receiver designed for the Commission's DTV transmission standard (*i.e.*, the ATSC 8-VSB standard).

74. We tentatively concluded that digital LPTV stations should be required to provide a free over-the-air video program service intended for reception by the general public. To meet this requirement, stations would need to transmit signals that could be viewed by receivers designed for the Commission's DTV transmission standard (*i.e.*, the ATSC standard including the 8-VSB modulation system). Beyond these general requirements, we do not believe it necessary to propose standards for

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[130] *Inquiry into the Future Role of Low Power Television Broadcasting and Television Translators in the National Telecommunications System.* 45 F.R. 69178 (1980).

[131] 47 C.F.R. § 74.731(f).

[132] 47 C.F.R. § 74.750(c).

[133] DTV broadcast stations must comply with the ATSC transmission standard, as incorporated by reference in Section 73.682(d) of our rules. ATSC is the abbreviation for the Advanced Television Systems Committee. Specifically, the transmission standard incorporates ATSC Documents A/52 (ATSC Standard Digital Audio Compression (AC-3), 20 Dec. 95 and A/53B (ATSC Digital Television Standard, 7 Aug. 01), except for Section 5.1.2. ("Compression format constraints") of Annex A ("Video System Characteristics") and the phrase "see Table 3" in Section 5.1.1 Table 2 and Section 5.1.2 Table 4. The standard includes the 8-VSB (vestigial side band) modulation system. The standard, as adopted by the Commission, excludes limitations regarding scanning formats, aspect ratios, and lines of resolution. The ATSC standard is available in its entirety at http://www.atsc.org.

digital LPTV transmitters related to signal quality. We believe LPTV licensees will want to provide service attractive to their viewers.

75. *Equipment Standards for Interference Avoidance.* We also seek to establish digital LPTV and translator equipment standards related to interference avoidance. In this regard, we believe the principal areas of concern are compliance with the out-of-channel emission mask and a transmitter's ability to operate within its rated output power. Transmitter output power, together with transmission line loss and antenna gain, determines a station's effective radiated power ("ERP"). A station's ERP and antenna height affect the range of a transmitted signal and, thus, its potential for causing interference. Analog transmitters in the LPTV service are required to maintain their output NTSC peak visual power within 2 dB when their input signal strength varies over a range of 30 dB and to prevent the rated power output from being exceeded under any condition.[134] For this purpose, translators generally use automatic gain control circuitry.

76. Digital transmitters have a rated "average power" measured at the transmitter's output channel filtering. We seek comment on whether we should establish a tolerance level for deviation from the rated average power output and, if so, what value to apply. Should we require a specific means of power control (*e.g.*,, automatic level control based on sampling of the output power at a transmitter's power amplifier)? The power control issue is doubly important because excessive power can result in more co-channel interference, and because out-of-channel emission levels can rise rapidly if a digital transmitter is operated at excessive power levels. Should we require use of automatic level control or other means to clamp transmitter output power at its rated value and require compliance with the emission mask at this level of output power?

77. We propose that digital LPTV transmitters and TV translators must comply with the emission mask(s) established in this proceeding, measured at the transmitter/translator output terminal (after output filtering). Sufficient attenuation of out-of-channel emissions is needed to avoid adjacent channel interference caused by sideband splatter. We seek comment on whether we should adopt any other equipment standards for digital translators and transmitters used in the LPTV service?

78. In considering permissible use, we are seeking comment on whether digital LPTV stations should be partially or fully exempted from a minimum video program service requirement based on special circumstances. In this regard, we seek comment on what technical standards and interference criteria should apply to transmitted material if and when a free off-air video program service is not required.

79. Analog LPTV and TV translator stations are required to operate with a transmitter that is either "certificated" by the Commission for compliance with the requirements of Section 74.750(c) of our rules, or alternatively, qualifies for use under the TV broadcast rules in Part 73.[135] Transmitters that qualify for use under the TV broadcast rules must be evaluated for compliance with the technical rules for that equipment under the "verification" procedure. The Commission's "certification" and "verification" procedures specify requirements for authorization of radiofrequency equipment by the

[134] 47 C.F.R. § 74.750(c).

[135] 47 C.F.R. § 74.750(a).

Commission and manufacturer self-approval, respectively.[136] We seek comment on whether the certification requirements for analog LPTV transmitters and TV translators should be applied for digital LPTV and TV translator transmitters or whether the TV/DTV verification procedure should be used. If we adopt a certification requirement for new digital equipment operated in the LPTV service, should we certify a transmitter or translator as a whole, including output filtering or also certify transmitter components such as a front-end digital processor (or digital transcoder)? Should we revise our equipment approval requirements for analog LPTV and TV translator transmitters to conform to our decision on such requirements for digital LPTV and TV translators? We seek comment on any other equipment approval issues that should be addressed in this proceeding.

4. Modification of Transmission Systems

80. Generally, the LPTV rules prohibit changes to the mechanical or electrical characteristics of certified equipment without authorization.[137] Where such authorization has been given, the manufacturer may provide instructions for making equipment changes. Station licensees are not required to have prior approval to make such equipment changes, but are required to notify the Commission upon completion. Licensees of analog LPTV or translator stations may add or replace analog modulation equipment to their facilities. A "qualified person" must examine the transmitting system after installation and certify in an application for station license compliance with pertinent technical standards.[138]

81. We seek comment on whether these provisions should be extended to digital LPTV and TV translator equipment. Assuming we adopt a certification requirement, under what circumstances, if any, should we permit LPTV or TV translator equipment certified for analog operation to be used for digital transmissions? For example, should we permit a translator operator to combine a certified digital front-end processor with the power amplifier of a translator certified for analog transmissions? Alternatively, should the Commission certify digital front-end processors for use with particular amplifiers and other equipment (*e.g.*, frequency up-converters and output filtering) and permit manufacturers to issue instructions for any necessary field modifications of the analog equipment? Would the permitted use of analog transmitter components in digital transmission systems result in significant cost savings to LPTV and translator licensees? If we were to allow such field modifications, how could we ensure the integrity of our technical standards? For example, how could a station licensee operating digitally with an analog heterodyne translator, rated for peak NTSC power output, determine

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[136] The certification procedure is set forth in Sections 2.907 and S2.1031-2.1060 of the rules, 47 C.F.R. §§ 2.907 and 2.1031-2.1060; the verification procedure is set forth in Sections 2.902 and 2.951-2.962 of the rules, 47 C.F.R. §§ 2.907 and 2.951-2.962. Under the certification procedure, applicants (equipment manufacturers or responsible parties) submit descriptions of equipment, measurement data, and other information to the Commission in an application for grant of equipment authorization. The Commission reviews this submission and, if it finds the device to be in compliance with the applicable rules, issues a grant of equipment authorization. Under the verification procedure, the equipment manufacturer or responsible party conducts appropriate measurements to determine whether a device is in compliance with the rules and then "self-approves" the device. There is no requirement for notification to or approval by the Commission. However the manufacturer/responsible party must maintain records of the equipment design, test procedure, report of test results and other information and must submit this information to the Commission on request.

[137] 47 C.F.R. § 74.751(a).

[138] 47 C.F.R. § 74.750(g).

the station's digital average transmitter output power and demonstrate that it would be maintained within permissible limits? Should station licensees be permitted to have a qualified person certify in FCC license applications that such transmitting systems, after installation, meet all digital equipment standards? Are there other facilities modification issues that should be addressed in this proceeding?

E. Station Operation

1. Time of Operation

82. Our rules do not require LPTV stations to operate according to a schedule, nor do the rules impose minimum hours of operation for these stations. The absence of such requirements stemmed from the Commission's desire to facilitate flexible LPTV station operations and minimize the cost of regulatory compliance. The Commission concluded that LPTV stations would have a self-interest in being responsive to the needs of the viewers they serve. The rules also do not specify minimum operating hours for analog TV translator stations. However, a translator station is expected to "provide service to the extent that such is within its control and to avoid unwarranted interruptions in the service provided."[139]

83. We invite comment on whether we should require minimum hours of operation for digital TV translator and/or LPTV stations and, if so, how should we structure the requirement?[140] We are mindful of rationale for not requiring minimum hours for analog LPTV stations, and we do not want to impose regulatory burdens that would discourage LPTV licensees from operating digital stations. We also recognize that even without such a requirement, many LPTV stations operate according to a program schedule; some operate 24 hours a day. Yet, a counterbalancing reason may exist for favoring at least a minimal operating requirement for digital stations. We expect that many LPTV and TV translator stations will encounter difficulty securing additional channels for digital operations. Prospective digital operators in nearby communities might have to compete for a remaining available channel(s). We desire that channels authorized to digital translator and LPTV stations be utilized to the extent possible to bring digital service to their communities. We are concerned that prospective stations, willing and able to provide extensive digital service, could be denied spectrum opportunities because of the need to protect other stations that operate only sporadically.[141] Should we adopt minimum daily and/or weekly hours of operation for digital LPTV and TV translator stations? If so, how many hours of operation should be required? Should any minimum required operating hours be phased-in? Would a minimum hours requirement be a disincentive to constructing and operating digital LPTV stations?

2. Unattended Operation

84. LPTV and TV translator stations may be operated unattended subject to certain

[139] 47 C.F.R. § 74.763(a).

[140] For example, after three years of operation, full-service TV stations must operate not less than two hours in each day of the week and not less than 28 hours per calendar week. 47 C.F.R. § 73.1740. Class A TV stations are required to broadcast at least 18 hours each day. 47 C.F.R. § 73.6001.

[141] It is possible that an LPTV or TV translator licensee or other prospective digital operator would secure a channel with the intent of offering only a minimal amount of digital service until there was sufficient DTV set penetration in the community.

requirements to guard against interference and outages of tower lighting.[142] For example, if a transmitter site cannot be promptly reached at all times, technical means must be provided to turn the transmitter on and off from a location that is readily accessible. Such unattended operation has not been problematic for analog stations, and we propose to apply the rule for digital LPTV and TV translator operations. We invite comment on this proposal. Although we do not understand this to be the case, are there technical differences for remotely controlling analog and digital transmitters/translators that we should consider?

3. Station Identification

85. Article 19 of the ITU Radio Regulations provides that "All transmissions should be capable of being identified either by identification signals or by other means" and that broadcast stations should carry signals identifying them by call sign, name of station, station location or other specified identifying information.[143] Identification signals make take forms including, but not limited to, "speech, using simple amplitude or frequency modulation" and "international Morse code transmitted at manual speed."[144]

86. Our rules provide several means for LPTV and TV translator station identification. Stations that do not originate local programming must either transmit the station's call sign in International Morse Code at least once each hour or arrange for a TV broadcast station, whose signal is being rebroadcast, to identify the station's call sign and location within certain periods of each broadcast day.[145] The Morse Code requirement dates back to the FCC's initial authorization of UHF translators in 1956. Its primary purpose was to assist the Commission or authorities in other countries to identify particular stations for the "policing of the radio frequency spectrum and the detection of violators."[146] When locally originating programming, LPTV stations must identify their stations aurally or visually at the beginning and ending of each time of such operations and on an hourly basis.[147]

87. We seek comment on appropriate means for digital LPTV and TV translator station identification. What identifying information should be required other than a station's call sign? The operation of many analog translators consists entirely of the heterodyne retransmission of TV broadcast signals. Also, some LPTV station operations consist only of the simultaneous retransmission of programming obtained from sources other than TV broadcast stations. It is likely that many digital TV translator and LPTV stations would operate in this manner. We seek comment on how stations equipped only to retransmit digital signals should be identified. We propose that that DTV broadcast stations or other program suppliers be permitted to identify the translator or LPTV stations that retransmit their signals.[148] Could station identifying information be embedded in the incoming digital signals of the

[142] 47 C.F.R. § 74.734.

[143] *See* ITU RR 19.1, 19.4, 19.16, 19.17.

[144] *Id.* at 19.18.

[145] 47 C.F.R. § 74.783.

[146] See *Report and Order* in Docket No. 12116, 20 R.R. 1555 (1956).

[147] *See* 47 C.F.R. § 73.1201 (the identification requirements for full-service TV stations).

[148] As indicated above, many TV broadcast stations identify analog TV translators that rebroadcast their signals, although they are not required to do so.

programming sources being retransmitted and, if so, how could this be done? DTV broadcast stations may transmit multiple program streams in a single channel. Where such stations identify TV translators, should the identifying information be required in each stream? Would this requirement be burdensome for DTV stations? In the *Second DTV Periodic Review NPRM* we sought comment on whether digital full power stations that chose to multi-cast should be permitted to include additional information in their station announcements identifying each program stream.[149]

88. It is likely that some TV translator and LPTV stations would retransmit signals for which DTV broadcasters or other program suppliers did not encode their identifying information. We seek comment on how these stations could identify? This would necessitate some means of interrupting the station's input signal or, alternatively, locally inserting identifying information into the input signal bit stream. We understand that regenerative-type transmitter/translators could be designed to accommodate data insertion, provided station licensees obtained additional equipment (*e.g.*, a digital service multiplexer). We are concerned that such equipment would be cost prohibitive to LPTV and TV translator stations, many of which operate on limited budgets. We seek comment on the equipment necessary for local insertion of digital station identification information and the related cost. Could this be accomplished through the use of a PSIP generator at an LPTV or translator station and, if so, how would the identifying information be inserted and at what cost? [150]

89. How could heterodyne-type digital translator stations identify themselves, other than through their primary DTV broadcast stations? The method used to transmit analog station call signs in Morse Code might not be applicable to the rebroadcast of DTV signals. Analog translators transmit call signs either through frequency shift keying of the NTSC aural and visual carrier frequencies or amplitude modulation of the aural carrier frequency. DTV signals do not have visual and aural carriers, other than a small VSB pilot carrier. Are there available and inexpensive technical means by which a station's identifying information could be added to its transmitted signal?

90. We seek comment on station identification requirements for digital LPTV stations equipped to originate local programming. Should such stations be required to identify in the manner of DTV broadcast stations (*i.e.*, either visually or aurally)? What specialized equipment would be required to do so and at what cost to station operators? We note that in the *Second DTV Periodic Review NPRM* we have proposed to require digital stations to follow the same rules for station identification as analog stations. We have sought comment on whether channel identification should be required for DTV stations and, if so, how the channel number should be identified.[151]

F. Authorization of Digital LPTV and TV Translator Stations

91. In this proceeding we will adopt rules and policies to govern the authorization of digital LPTV and TV translator service. We seek comment on application filing criteria and other issues relating to authorization of the following: digital conversion of existing analog stations, new digital

[149] *Second DTV Period Review*, 18 FCC Rcd at 1325, ¶ 125.

[150] PSIP stands for Program System and Information Protocol. A PSIP generator would add information to the digital bit stream to facilitate, *inter alia*, program identification and channel mapping. The role of the A/65A PSIP standard of the Advanced Television Systems Committee is being considered in the Commission's second periodic review of its DTV policies and rules. *Id.*, ¶ 114.

[151] *Id.*, ¶ 125.

stations, and modifications of digital facilities, including provisions for channel "displacement" relief. We seek rules, policies and processes that will facilitate the rapid implementation of digital LPTV and TV translator service and also consider other LPTV service needs. Unless specifically addressed in this *Notice*, we propose to apply to digital LPTV and TV translator stations the rules, policies, and procedures applicable to analog stations in the LPTV service.

92. *Digital Conversion on Channels Authorized for Analog Service.* As the DTV transition progresses, licensees of analog LPTV and TV translator stations may wish to convert to digital operations on their authorized channels. We propose to authorize the digital conversion of a licensed analog LPTV or TV translator station, or a station holding a construction permit for such a facility, as a "minor" facilities change[152] provided: (1) the proposed digital facility would not involve a channel change not related to channel displacement, and (2) the protected digital signal contour of the proposed facility would overlap some portion of the protected contour based on the station's analog authorization.[153] Consistent with our rules for LPTV minor change applications, we propose to grant "digital conversion" applications on a first-come, first-served basis under the current processing procedures.[154] Digital conversion applications having predicted interference conflicts with other applications filed on the same day would be mutually exclusive. As discussed below, we ask whether digital applications that are mutually exclusive with other analog or digital applications filed would be subject to the auction process. Permitting on-channel digital conversion proposals to be filed as minor change applications would in most cases result in a quicker authorization of service than if these applications were filed as major facilities changes. We seek comment on these proposals and, in particular, how we should consider mutually exclusive digital conversion and channel displacement relief applications. Applications for replacement channels by stations whose channels have been displaced are accorded a higher priority than applications for new or modified facilities, regardless of which application was filed earlier.[155] Should a digital conversion application be subject to dismissal if it becomes mutually exclusive with a displacement relief application of an analog or digital LPTV, TV translator or Class A TV licensee or permittee?

93. *Authorization of New Digital Stations.* Applications for new analog LPTV and TV

[152] On-channel digital conversion of an analog TV broadcast station that has not been provided with a paired digital channel would also be authorized as a minor change.

[153] This contour overlap constraint also applies to analog LPTV and translator minor change applications. *See* 47 C.F.R. § 73.3572(a)(2). The LPTV minor change definition permits flexibility to change facilities, while also preventing a station from relocating away from its viewing audience.

[154] Class A stations may convert their existing analog channels for digital operations at any time, thus becoming digital Class A TV stations (*Class A Report and Order*, ¶ 92). Class A TV facilities changes, other than channels changes, are considered to be "minor" changes, provided the protected signal contour resulting from the changed facilities would overlap some portion of the protected contour based on the Class A station's authorized facilities (*Class A Report and Order*, ¶110). The *Class A Report and Order* did not explicitly characterize an on-channel digital conversion of an analog Class A station authorization as a minor change. We here clarify that Class A station licensees and permittees may seek an on-channel digital conversion by filing an application for a minor facilities change pursuant to the definition and application processing criteria given in Sections 73.3572 at paragraphs (a) and (f). An analog-to-digital converted digital Class A station would have the same interference protection priorities as an analog Class A station.

[155] 47 C.F.R. § 73.3572(a).

translator stations and major facilities modifications to existing LPTV and TV translator stations are subject to the application filing and competitive bidding or "auctions" procedures given in Section 73.5002 *et seq.* of our rules.[156] The process begins with a Commission Public Notice announcing an auction proceeding, including the time period during which all applicants seeking to participate in an auction must file their applications ("auction filing window").[157] We must consider whether to apply some or all of these procedures to digital LPTV and TV translator applications or whether to adopt new procedures that could better facilitate the transition from analog to digital television service.

94. We first ask whether the auction exemption provisions in Section 309(j)(2)(B) of the Communications Act apply to mutually exclusive applications for new LPTV and TV translator digital stations or where such applications are mutually exclusive with other applications in the LPTV or Class A TV services.[158] That provision states that competitive bidding authority shall not apply to licenses or construction permits "for initial licenses or construction permits for digital television service given to existing terrestrial broadcast licensees to replace their analog television service licenses." Since that provision was adopted in the Balanced Budget Act of 1997[159] in conjunction with a number of other provisions meant to facilitate the full power digital television transition, we ask whether it was Congress' intent to include applications for low power and television translator digital stations in the statutory auction exemption.[160] We seek comment on this analysis. If the auction exemption does not apply, we propose to permit applicants for digital stations in the LPTV service to resolve mutual exclusivities through engineering solutions or settlements.[161] We seek comment on this proposal.

95. Should we determine that the auction exemption does apply, we seek comment as to an alternative proposal for resolving mutually exclusive applications for low power and television translator

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[156] We recently upheld the use of auctions with respect to LPTV and TV translator applications filed by noncommercial educational entities. We concluded that the auction exemption extends only to LPTV and TV translator applications for which the proposed facilities would be owned and operated by municipalities that would transmit only education programming. *See Reexamination of the Comparative Standards for Noncommercial Educational Applications*, 18 FCC Rcd 6691 (2003), paragraphs 15-18.

[157] 47 C.F.R. § 73.5002(a). During the auction filing window, LPTV, translator and Class A TV applicants for new stations and major facilities changes submit "short-form" applications, together with required certifications, information and exhibits, which includes technical data on the proposed facility necessary to determine mutually exclusive applications (*i.e.*, applications that cannot all be granted in compliance with our interference protection standards). Complete "long form" applications are filed by applicants who are notified by Public Notice that their applications are not mutually exclusive and by winning auction bidders. Long form applications are processed according to the Commission's rules and policies and subject to the filing of petitions to deny.

[158] 47 U.S.C. § 309(j)(2)(B).

[159] Pub. L. No. 105-33, 111 Stat. 251 (1997) (*Balanced Budget Act of 1997).*

[160] *See* H.R. Conf. Rep. No. 217, 105th Cong., 1st Sess. 1997, at 573; 1997 U.S.C.C.A.N. 176, ("Any mutually exclusive applications received after June 30, 1997, shall be subject to the Commission's rules regarding competitive bidding, including applications for secondary broadcast services such as low power television, television translators, and television booster stations.")

[161] Applicants for stations in the low power television and other secondary services are "permitted to resolve mutual exclusivities by means of engineering solutions or settlements during a limited period after the filing of short-form applications." 47 C.F.R. § 73.5002(d).

digital stations. For this purpose, we could utilize a procedure similar to the one we adopted for full power digital television "maximization" applications.[162] Under such an approach, we could notify the members of the mutually exclusive group via Public Notice and allow the parties a specific period of time to resolve their mutual exclusivity via settlement or engineering solution. If the parties failed to find a resolution, we could dismiss all applications in the group that remained mutually exclusive. We seek comment as to the feasibility of such an approach for dealing with mutually exclusive applications for digital low power and television translator stations should we determine that we do not have the authority to use auctions in such cases. We also invite comment on any alternative means for resolving mutually exclusive applications if the auction exemption does apply.

96. We face difficult choices as we consider policies and priorities for creating digital service opportunities for the LPTV service. One major difficulty will be deciding how to structure application filing opportunities in a way that balances our goals for the digital transition with the other needs of existing licensees, as well as unmet needs for analog service. The LPTV service is now well-established. Hundreds of communities throughout the country depend on LPTV and TV translator stations for free over-the-air television service. Many LPTV stations provide the only local off-air TV service in a community. Because of limited channel availability in many areas of the country, station licensees will also have to balance new digital service offerings to their viewers against the continuation of current analog TV programming services. Some stations may be able to secure additional channels for digital operations, depending in part on the extent of competition for these channels. Others may not be able to do so and must eventually consider converting their existing analog service to digital service.

97. We tentatively conclude that we should place a high priority on facilitating the digital transition of existing LPTV and TV translator service. We also wish to provide opportunities for Class A TV stations to secure channels for digital LPTV operations.[163] In the DTV proceeding, initial digital service was built around the base of existing analog TV broadcast stations.[164] We believe similar action may now be appropriate with respect to existing LPTV, TV translator and Class A stations (*i.e.*, providing those stations the initial opportunity to further the DTV transition in their communities before providing digital station opportunities to non-incumbents). We believe that such a policy would maximize opportunities for viewers, stimulate DTV set penetration, and also minimize the loss of existing analog program services.[165] Given that Section 336(a)(1) does not apply here, we seek comment

[162] *See Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, 16 FCC Rcd 5946 (2001) ("*DTV R&O*"), paragraphs 43-49.

[163] Class A TV stations were formerly LPTV stations.

[164] Congress limited the initial eligibility for licenses for advanced television services (DTV) to "...persons that, as the date of such issuance, are licensed to operate a television broadcast station or hold a permit to construct such a station (or both)" 47 U.S.C. § 336(a)(1). In the DTV 5th *Report and Order*, the Commission awarded initial DTV licenses (and DTV channel allotments) to full-service broadcasters that held either an analog station license or a construction permit on the date of adoption of that *Order*.

[165] We do not propose an analog/digital simulcast requirement for LPTV or TV translator stations that would provide both digital and analog service. We believe that many station licensees would seek to offer the same programming services on both channels in an effort to provide continuity of programming service.

on this tentative conclusion.[166]

98. We seek comment on the following approach for accepting applications for construction permits for new digital LPTV and TV translator stations. Under this approach, we would first issue a Public Notice announcing a digital-only application filing window with filing eligibility limited to LPTV, TV translator and Class A TV licensees and permittees ("incumbents"). Class A TV licensees and permittees would be filing for digital authorizations in the low power television service. This window would not be geographically restricted.[167] At some time after processing the applications received in the initial window, we would announce the commencement of a separate filing procedure referred to as "rolling one-day filing windows." In this first-come-first-served filing procedure, the applicant eligibility would not be restricted.[168] As an application acceptance condition, proposed facilities would be required to protect those in all earlier-filed applications. Applications having predicted interference conflicts with other applications filed on the same day would be considered to be mutually exclusive.

99. We believe this application filing approach would further the goals of the DTV transition in two important respects. First, it would provide incumbent station operators the initial opportunity to seek available channels for the provision of digital service to their communities. In the DTV proceeding we concluded that there would be insufficient spectrum to accommodate fully existing translator and LPTV stations. Stations that could not secure channels for digital service would eventually need to convert existing analog service to digital. We can understand the reluctance of station licensees to terminate analog program offerings until there would be a sufficient penetration of DTV receiving equipment in their communities. A digital-only window with restricted eligibility would help existing station operators obtain channels on which to begin digital service offerings, thereby minimizing the disruption that could be caused by the earlier than desired cessation of analog service. During the DTV transition, viewers in such communities would have access to both digital and analog service, as do viewers that can directly receive the signals of full-service TV and DTV stations. Thus, we believe an initial digital window for incumbents could stimulate digital service in those areas served by LPTV and TV translator stations, particularly in rural communities that cannot receive the signals of full-service stations. A window of sufficient duration and announced suitably in advance would provide a fair opportunity for incumbents to prepare their applications.

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[166] In limiting initial eligibility for DTV licenses to existing full-service TV broadcasters, the Commission noted its previous determination that "there is insufficient spectrum to include LPTV stations and translators, which are secondary under our rules and policies, to be initially eligible for a DTV channel." *See Advanced Television Systems and Their Impact upon the Existing Broadcast Service* (*5th Report and Order*), 12 FCC Rcd 12809 (1997), ¶ 18.

[167] Many stations, particularly LPTV and Class A stations, are located in and around major cities for which the last opportunity to file for a new station occurred in 1991. Thereafter, the Commission has precluded the filing of applications for new stations located within 100 miles of the then 30 highest ranked television market-cities. This was done to preserve spectrum options for DTV service in those markets. Under this filing approach, licensees and permittees of LPTV, translator and Class A stations within these areas would be permitted to file applications for new digital stations.

[168] The Commission adopted the approach of an initial window followed by rolling one-day windows for certain applications filings in the Multipoint Distribution Service. *Amendment of Parts 21 and 74 to Enable Multipoint Distribution Services and Instructional Fixed Service Licensees to Engage in Fixed Two-way Transmissions*, 13 FCC Rcd 112 (1998). One-day windows also govern the filing of DTV maximization applications. *DTV R&O*, ¶ 41.

100. As a second benefit, a digital-only window for incumbents would likely result in the filing of substantially fewer applications than would be received in a window without eligibility restrictions. We believe it also would reduce the extent of mutually exclusive application filings.[169] As a result, digital stations could be authorized more quickly, facilitating an earlier delivery of digital LPTV and translator service.

101. We seek comment on the issue of whether our incumbent-first filing approach is consistent with the Supreme Court's decision in *Ashbacker* and subsequent court decisions.[170] In *Ashbacker*, the Court interpreted the hearing requirement in Section 309 of the Communications Act[171] to require the Commission to consider two mutually exclusive applications, both of which had been accepted for filing, in a comparative hearing before granting one and denying the other. At the same time, *Ashbacker* allows the Commission to promulgate regulations limiting the filing rights of competing applicants, and leaves to the Commission's discretion the circumstances under which applications are considered mutually exclusive. We do not believe that *Ashbacker* applies directly in this case because the procedures we address are to restrict eligibility and do not deal with mutually exclusive applications. We seek comment on this issue.

102. With respect to the so-called "spirit of Ashbacker" line of cases, the fundamental legal premise underlying those cases was that "comparable consideration ... is the process most likely to serve the public."[172] That policy, however, has been affected by subsequent amendments to the Communications Act establishing an auction environment. For example, when Congress adopted Section 309(j), it provided that the Commission should continue to avoid or reduce the likelihood of mutual exclusivity among applications when the Commission finds that it is in the public interest to do so. The procedure we address here is premised on a desire to limit the number of mutually exclusive digital LPTV applications to expedite the low power digital transition. Therefore, we believe that the incumbent-first approach may best serve the public interest.

103. With regard to rolling one-day windows, neither the auction statute nor our rules prescribe a fixed time period for permitting the filing of applications. Rather, the statute stipulates only that non-exempted mutually exclusive applications are subject to competitive bidding.[173] We believe that rolling

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[169] Based on our experience, we are concerned that an unrestricted window, albeit digital-only, could result in the filing of many thousands of applications, especially if we did not impose geographic restrictions on application filing (*i.e.*, to permit opportunities for all TV translator and LPTV stations to seek channels for digital operations). The most recent LPTV Service auction filing window occurred in August, 2000. It was geographically restricted in an effort to provide filing opportunities in rural areas. Applicants were not permitted to propose new translator or LPTV stations within 75 miles of cities corresponding to the 125 highest ranked television markets. Yet, approximately 4700 applications were filed in this window. Approximately 3700 of these applications were mutually exclusive.

[170] 326 U.S. 327 (1945) (*Ashbacker*); *see also, e.g., Community Broadcasting Co. v. FCC*, 274 F.2d 753, 759 (D.C. Cir. 1960).

[171] 47 U.S.C. § 309.

[172] See, *United States v. Storer Broadcasting Co.*, 351 U.S. 192, 202, 205 (1956); *see also, Aeronautical Radio, Inc. v. FCC*, 928 F.2d 428, 439 (D.C. Cir. 1991).

[173] 47 U.S.C. § 309(j)(1).

one-day windows could help to manage the flow of applications and result in a quicker authorization of LPTV and translator service. Applicants, including new entrants, could seek available channels without having to wait the customarily long periods of time between auction filing windows. In the long run, we expect this approach would also avoid the large backlogs of mutually exclusive applications associated with pre-announced filing windows. As possible draw backs, applications for new and major changes could become mutually exclusive with minor facilities change applications filed on the same day. There would also be an increased possibility that applications for new stations would become mutually exclusive with channel "displacement relief" applications. If we were to continue according displacement applications the highest priority, mutually exclusive applications for new stations would be subject to dismissal.[174]

104. We recognize that an initial digital-only application filing window restricted to incumbent station operators would delay and could preclude digital service offerings by new entrants willing and able to operate stations within a relatively short period of time. It would also delay and could limit spectrum opportunities for additional new analog translator or LPTV service, possibly affecting service to communities that have little or no off-air access to television service or local service.[175]

105. Over the years, the Commission has taken actions intended to further or preserve the analog service provided by LPTV and TV translator stations. For example, we established an application priority and other provisions to assist stations that were displaced by actual or potential interference conflicts.[176] We also altered the definition of minor facilities changes in a manner that permits nearly all changes to be filed at any time on a first-come-first-served basis.[177] The Commission has accepted applications for new LPTV and TV translator service in several filing windows. Even with the constraints imposed by the transition of full-service stations to digital, we have sought to address LPTV service needs. For example, the most recent application filing window was tailored to provide additional analog service opportunities in rural areas where service needs may be greater.[178]

106. We now believe it is appropriate to focus our attention on digital translator and LPTV service. In doing so, for the reasons given above, it may be necessary for us to take actions that could limit further growth of analog LPTV and TV translator service. This would be analogous to the approach

[174] In the LPTV service, applications seeking replacement channels are accorded the highest priority as a means of mitigating service disruptions due to a station's loss of its channel because of an actual or potential interference conflict. *See* 47 C.F.R. § 73.3572(a)(4).

[175] *See, e.g., For Amendment of Part 74 of the Commission's Rules to Add a Rural Translator Service,* filed by the National Translator Association ("NTA"), RM-10666 (2002). In its Petition for Rule Making, the NTA examines current levels of television service provided by translators, concluding there is a need for additional translator stations to serve rural America. It seeks a streamlined authorization of translator service for those communities that receive Grade B service from no more than three full-service television stations. *See also Media Bureau Seeks Comment on National Translator Association's Petition for Rule Making to Establish a Rural Translator Service*, 18 FCC Rcd 3262 (2003) (*Public Notice*).

[176] *See, e.g., DTV Sixth Report and Order.*

[177] *See Class A Report and Order*, ¶ 110.

[178] *See Notice and Filing Requirements Regarding July 31 through August 4, 2000 Limited Low Power Television/Television Translator/Class A Television Auction Filing Window*, Report No. AUC-00-81-A (Auction No. 81), DA 00-1383 (June 23, 2000) (*Public Notice*).

we followed in the DTV proceeding to preserve spectrum options for DTV stations. In 1996, we ceased accepting applications and rule making petitions for new analog full-service.[179] Many existing LPTV and translator stations may have little choice but to convert to digital service on their existing analog channels at an appropriate time for their communities. We are concerned about making this situation even more difficult by authorizing additional analog stations, particularly in those geographic areas where spectrum is most limited.

107. We seek comment on how we should structure application filing policies and procedures to appropriately balance our digital service objectives and analog LPTV service needs. We invite comment on the merits of an initial digital-only application filing window limited to incumbent LPTV, TV translator, and Class A TV licensees and permittees. If we were to adopt this approach, should we place additional restrictions on application filings? For example, should we limit the number of applications that could be filed by a single entity? We would propose to require that incumbents obtaining digital channels in such a window serve the same communities receiving their analog service. In this regard, should we further require co-located or nearly co-located analog and digital operations? Full-service broadcasters are authorized the use of a second channel on which to provide DTV service. By statute, broadcasters must surrender one of these channels at the end of the transition. In exchange for the "first" opportunity to seek available digital channels, should we require LPTV, TV translator and Class A station incumbents that secure such channels to give back the same number of channels at the end of the DTV transition or at some other time?[180] Such a requirement may create future opportunities for new entrants seeking spectrum for digital LPTV or translator stations.

108. We also seek comment on the use of rolling one-day windows. What are the advantages and disadvantages of this approach? Are there other filing approaches we should consider? Finally, we invite comment on the extent to which we should continue to permit the filing of applications for new analog LPTV and TV translator service. If we adopted rolling one-day windows, should we accept applications for new analog stations? Should we geographically restrict the filing of applications for new analog stations (*e.g.*, to those areas having the most extreme unmet television service needs)? Alternatively, should we permit the filing of applications for new analog stations on the condition that they would be subject to dismissal where mutually exclusive with an application for a digital LPTV or translator station?

109. *Section 336(f)(4).* We have described above a licensing scheme for digital channels for Class A, LPTV and television translator stations that is based on Part 74 of our rules; that is, it contemplates awarding stations in these services an additional channel that would be secondary in nature, regardless of whether the station's existing analog channel is protected, as are those of Class A stations, or subject to displacement by primary stations, as are those of translators and LPTV stations. This approach has several key benefits. It does not require us to distinguish among applicants for additional channels based on their current class of analog license, thus simplifying the licensing process. It does not award channels in the digital service that would, at this point in the digital transition, require protection by full-service stations, thus easing concerns that providing digital channels to Class A, LPTV and translator stations would limit our flexibility in implementing the digital transition for full-service

[179] *See Sixth Further Notice of Proposed Rule Making*, 11 FCC Rcd 10968 (1996).

[180] In this event, a Class A station would retain Class A TV regulatory status on the channel it chose to retain for digital operations.

television stations.[181] And, given the secondary nature of the channels awarded, it permits us to use less extensive interference protection standards, thus expanding the number of stations that might obtain an additional channel. If the channels awarded were to be protected, the interference standards would have to be more stringent.[182]

110. We recognize, however, that Section 336(f)(4) of the Communications Act describes a different approach to providing digital channels for some stations.[183] Specifically, this section states that the Commission is not required to issue additional licenses for advanced television services to Class A and television translator stations, but must accept applications for such services if they meet certain strict interference criteria. Section 336(f)(4) does not appear to provide for additional channels for non-Class A low power stations and expressly requires that either the analog channel or the additional digital channel be forfeited at the end of the digital television transition period. Finally, the section provides that low power television and translator stations may, at their option, elect to convert to digital operation on their analog channel. One significant question raised by Section 336(f)(4) is whether any additional channels awarded under its terms would be protected from displacement by primary stations and, if so, would this status extend only to Class A stations' digital channels or to translators' channels as well.

111. We seek comment on whether the licensing approach detailed in Section 336(f)(4) is the only means by which we might award additional digital channels to Class A and translator stations or whether we may use the "all-secondary" channel approach we have described above and defer the implementation of the 336(f)(4) licensing scheme until a later point in the digital transition. *In the Class A TV Report and Order*, we deferred matters regarding the issuance of additional licenses pursuant to Section 336(f)(4), noting our concern "to preserve spectrum to accommodate needs associated with the transition of full-service stations to digital service."[184] Alternatively, is there a method by which we might combine the statutory approach with the secondary channel approach? For example, could we permit applications meeting Section 336(f)(4) standards to be filed at the same time as those seeking secondary licenses and provide for some means of resolving mutual exclusivity between applications in different classes? Should we prefer one class of application over another where a conflict is presented? Would any such preference be consistent with *Ashbacker?*[185]

112. *Minor Facilities Change and Displacement Relief Authorizations.* In addition to the on-channel digital conversion of analog service, we propose that subsequent application proposals for digital LPTV and TV translator facilities changes be authorized as "minor" changes, using the definition given

[181] The secondary nature of the additional channel that would be awarded to Class A stations under our proposed licensing scheme does not mean that Class A stations would be denied protected Class A status on their digital channel either after the digital transition or at some later point in that transition. Rather, we intend only that the additional channel provided here would – at least initially – be secondary.

[182] LPTV and TV translator stations must protect the DTV service resulting from the facilities specified in station licenses and construction permits (*i.e.*, the authorized service). 47 C.F.R. § 74.706. Pursuant to Section 336(f)(7) of the Communications Act, Class A stations must protect both the authorized service and the service that would result from the engineering parameters associated with the station's DTV channel allotment.

[183] 47 U.S.C. § 336(f)(4).

[184] *Class A TV Report and Order*, ¶ 95.

[185] 326 U.S. 327 (1945) (*Ashbacker*).

for analog station minor changes[186] (*i.e.*, all changes except non displacement-related channel changes and site relocations for which the modified and authorized protected service contours would not overlap to any extent). We also propose that the displacement relief policies and procedures now applicable for analog translator and LPTV stations generally apply to digital LPTV and TV translator stations (*i.e.*, stations having a reasonable expectation of channel displacement due to actual or predicted interference conflicts.)[187] We seek comment on these proposals. How should we resolve situations where applications for digital TV translator or LPTV stations would become mutually exclusive with displacement relief applications of analog LPTV, TV translator or Class A TV stations? Should an absolute priority be awarded to either class of application?

113. *Section 309(j)(14).* Section 309(j)(14)(A) of the Communications Act provides that the Commission may not renew a license for analog broadcast television service for a period extending beyond December 31, 2006.[188] We seek comment on whether this provision applies to analog authorizations in the low power television service. We note that Section 3 of the Communications Act defines the term "analog television service" as "television service provided pursuant to the transmission standards prescribed by the Commission in Section 73.682(a) of its regulations.[189] The LPTV service rules (Part 74, Subpart G) do not make reference to this rule section. Does this mean that stations licensed in the LPTV service do not have to cease analog service by the deadline prescribed in Section 309(j)(14)? What about Class A stations licensed under Part 73? If we conclude that stations in the low power television service are not subject to Section 309(j)(14), does that mean that such stations are not required to operate digitally for purposes of Section 309(j)(14)(B), which sets forth three conditions that qualify a station for an exemption of the analog authorization termination date in Section 309(j)(14)(A)?

114. Under the heading "Issuances of Licenses for Advanced Television Services to Television Translator Stations and Qualifying Low-Power Television Stations," Section 336(f)(4) of the Communications Act provides that "A licensee of a low-power television station or television translator station may, at the option of the licensee, elect to convert to the provision of advanced television services on its analog channel, but shall not be required to convert to digital until the end of such transition period."[190] This statutory provision appears to require that Class A TV and TV translator stations convert to digital operation at the end of the transition period. We seek comment on the applicability of this provision and whether or not the digital conversion requirement extends to non-Class A LPTV stations.

115. We reiterate our goals to hasten and facilitate the transition to digital television service. Accordingly, what, if any, digital conversion requirement we should adopt for any stations for which the

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[186] 47 C.F.R. § 73.3572(a)(2).

[187] 47 C.F.R. § 73.3572 (a)(4) at subparagraphs (i), (ii) and (iv).

[188] Section 309(j)(14) provides:

(A) LIMITATIONS ON TERMS OF TERRESTRIAL TELEVISION BROADCAST LICENSES. – A television broadcast license that authorizes analog television service may not be renewed to authorize such service for a period that extends beyond December 31, 2006.

[189] 47 U.S.C. § 3(49).

[190] 47 U.S.C. § 336(f)(4).

conversion is not statutorily mandated? Should we adopt for these stations a trigger-based mechanism for the eventual cessation of analog service (*i.e.*, with transition-ending triggers analogous to those for full-service stations, but taking into account significant differences between full-service stations and LPTV, TV translator and Class A TV stations)?[191] If so, what would be the appropriate criteria? We invite comment on this issue.

116. *Digital Station Construction Period.* We propose to apply to digital LPTV and TV translator stations the construction period provisions applicable to analog LPTV and TV translator stations.[192] Each original construction permit for a new station or changes to an existing station specifies a period of three years from the date of issuance of the original construction permit for completion of construction and filing of a license application. For example, at some time within three years of receiving its initial construction permit, a station may submit an application to modify the authorized, but as yet unbuilt, facilities. The construction permit for the modified facilities will specify the same expiration date as the original construction permit. We seek comment on our proposals regarding construction periods for digital stations in the LPTV service. If we were to adopt an initial filing window for new digital stations, restricted to incumbent stations, should we consider an accelerated buildout for digital stations granted through this window (*e.g.*, a two-year construction time)? Would such a requirement be reasonable in exchange for a "first filing opportunity," and would it be likely to advance the digital transition?

117. *Application Forms.* Applications for new LPTV, TV translator and TV booster station construction permits or for modifications to authorized facilities are made on FCC Form 346. We anticipate that use of this form for digital station proposals would require few alterations (*e.g.* the addition of indicator that the application relates to digital service and specification of an emission mask, in the event we were to adopt multiple masks with associated adjacent channel D/U protection ratios).

G. Digital Booster Stations

118. The LPTV service rules contain provisions for the authorization of analog television broadcast booster stations.[193] Booster stations are secondary stations that retransmit the programming of TV broadcast stations on the same channel without significantly altering any characteristic of the input signal other than its amplitude. They provide a means of serving shadowed areas within a broadcast station's service area and may be authorized only to full-service TV broadcasters whose signal the booster will retransmit. The predicted Grade B signal contour of a booster may not extend beyond the Grade B contour of the associated analog TV broadcast station. Boosters operate under the LPTV and TV translator technical standards (*e.g.*, effective radiated power limits and out-of-channel emissions). Boosters can either amplify their input signal or use a signal demodulation/remodulation process. They can receive input signals directly off-air or via the same microwave delivery sources permitted for TV translator stations.

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[191] For example, stations in the LPTV service operate on a secondary basis and serve much smaller audiences than full-service stations. Many TV translator stations are community-supported, and many LPTV stations also operate on limited budgets. Further, LPTV, TV translator and Class A stations have not been awarded channels for digital service, and many would be required to convert to digital service on their analog channels. These stations also will have been given less time than full-service stations to prepare for operations after the DTV transition ends.

[192] 47 C.F.R. § 73.3598.

[193] 47 C.F.R. §§ 74.701 (i), 74.731 at subparagraphs (g) and (h) and 74.784 (d).

119. Analog on-channel boosters must be carefully engineered to ensure sufficient isolation between incoming and outgoing signals. Otherwise, the booster output signal will interfere with its ability to receive the input broadcast signal on the same TV channel. The necessary isolation is often achieved by physically separating the receiving and transmitting portions of the booster, sometimes with an intervening terrain barrier, and using a microwave link to connect the input and output sections. Engineering an analog booster station also requires careful consideration of the propagation characteristics for both the primary station's and the booster station's signals to ensure that one signal is enough stronger than the other at all desired receiving locations so that unacceptable degradation does not occur. Similarly, engineering a digital booster station would also require careful consideration of the propagation characteristics of the direct and reflected paths of the incoming and outgoing signals to ensure that a DTV receiver's adaptive equalizer could satisfactorily process signal echoes.

120. We seek comment on whether we should establish a digital booster class of station in our LPTV service rules and, if so, what requirements should govern the authorization and operation of such stations. In the *Second DTV Periodic Review NPRM*, we are considering distributed "single frequency network" transmission technology, which differs from the on-channel booster stations addressed in this proceeding.[194] A low power digital booster could prove useful in delivering DTV signals within terrain-challenged portions of a digital station's service area. Where they could be effectively engineered, on-channel boosters might also be the only means of providing service to communities where TV channels otherwise would not be available for digital translator stations. If we were to create a digital booster class of station in our LPTV rules, who should be eligible to receive a booster authorization (*e.g.*, only full-service broadcasters, as is the case now, or also licensees of Class A TV, LPTV and TV translator stations)?

121. Should digital boosters be limited to improving signal coverage within a station's protected signal contour as is the case for analog boosters (*i.e.*, by requiring the service contour of a digital booster to be encompassed by the service contour of the station whose signal is being retransmitted)? Should digital boosters also be permitted to deliver programming to communities or areas located beyond the protected area of the station whose signal is being retransmitted (*i.e.*, where technically feasible, as an alternative delivery mechanism to a digital TV translator)? Could such use of boosters enable more efficient spectrum use (*e.g.*, in areas of hilly or mountainous terrain where spectrum opportunities are limited due to a high density of analog translators)? Because DTV interference analysis does not consider analog or DTV broadcast stations to be serving shadowed areas, other stations may be allowed to provide service in those areas or to transmit a signal into those areas that would interfere with service. Under these conditions, booster stations would be more likely to cause or receive interference than they were when the analog booster service was created. Therefore, the interference analysis used for LPTV and TV translator stations may now be appropriate for digital boosters, although it was avoided when the analog booster rules were adopted. If such interference analysis is necessary even for boosters within the primary station's service contour, is there any reason to continue prohibiting boosters from serving areas outside the primary station's service contour?

[194] *Second DTV Period Review NPRM*, paragraphs 99-106. Distributed transmission systems involve the operation of multiple highly synchronized transmitters. In that proceeding, the Commission sought comment on a range of issues for distributed systems including regulatory status, location and service area, power, interference protection and other technical standards. As distinct from that consideration of distributed transmission systems, herein we are only considering a digital equivalent of secondary-status analog TV booster systems.

122. Should we apply to digital boosters the interference protection methodology and technical standards we adopt for digital LPTV and TV translator stations (*e.g.*, protected signal contour, effective radiated power limits, emission mask and interference protection D/U ratios and methodology, excluding co-channel protection of the station whose signal is retransmitted by the booster)? Should digital boosters be permitted to receive input signals in the manner of digital LPTV and translator stations? Do any other issues involving digital on-channel boosters need to be addressed in this proceeding? Are there any reasons why we should not create a digital booster station class in our LPTV rules or, alternatively, should restrict their use?

H. Remaining Issues

1. Digital Call Signs

123. We seek comment on an appropriate call sign suffix for digital TV translator and LPTV stations. Call signs for analog LPTV and translator stations consist of the letter K or W followed by the station's assigned channel number and two additional letters.[195] Should this call sign format be altered for digital stations and in what manner? LPTV and Class A stations may use four letter call sign with the designated suffixes "-LP" and "-CA" respectively.[196] Should these suffixes be changed to denote digital operation (*e.g.*, "-LD" for digital LPTV and "-CD" for digital Class A stations)?

2. Fees

124. We request comment on what fees should apply to digital LPTV and TV translator stations. We believe it would be appropriate to use the same application fees for analog and digital LPTV and TV translators for particular types of applications (*e.g.*, new and major change, minor change, and assignment and transfer). How should we consider digital LPTV and TV translator stations for purposes of regulatory fees assessed pursuant to Section 9 of the Communications Act of 1934?[197] If we permitted digital LPTV service stations to offer ancillary and supplementary ("A&S") services on a subscription basis that are feeable for DTV broadcast station, does Section 336(e) of the Act require us to levy fees for such services?[198] This statute relates fees to the DTV eligibility provisions given in Section 336(a) (*i.e.*, full-service DTV broadcasters). If fees are not statutorily required for digital LPTV A&S services, should we nonetheless impose annual fees for subscription services feeable for full-service broadcasters? What should be the basis for such fees if we impose them? Should we follow the approach applicable to DTV broadcasters (*i.e.*, an annual fee in the amount of 5% of a station's gross revenue from feeable services)? Alternatively, should we not levy subscription fees on digital stations in the LPTV service, many of which operated on limited budgets and may provide subscription-based services to raise revenues to maintain station operations?

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[195] 47 C.F.R. § 74.783(d).

[196] 47 C.F.R. § 73.3550.

[197] 47 U.S.C. § 159.

[198] 47 U.S.C. § 336(e).

3. International Coordination Provisions

125. Existing bilateral agreements with Mexico and Canada do not address digital LPTV and TV translator stations.[199] Under these agreements, analog LPTV and TV translator stations have a secondary status with respect to Canadian and Mexican primary television stations and allotments and must not cause interference to the reception of these stations, nor are LPTV and TV translator stations protected against interference from these stations. The agreements also include provisions for notifying and coordinating analog LPTV and TV translator station proposals in the border areas. We will work over time to update the current bilateral agreements to include provisions for digital LPTV and TV translator stations. In the interim, we will attempt to obtain the approval of digital LPTV and TV translator stations in the border area on a case-by-case basis.

4. Use of Broadcast Auxiliary Service Frequencies

126. LPTV stations may be authorized to use television broadcast auxiliary service ("BAS") spectrum to operate remote pickup stations, studio-to-transmitter links and point-to-point relay systems.[200] TV translator stations may be authorized to operate translator relay stations. LPTV service stations use BAS spectrum bands on a secondary basis, subject to displacement by full-service TV stations. We propose to extend BAS eligibility provisions to permit digital LPTV and TV translator stations to operate on the same bands and for the same purposes as analog LPTV and TV translators, subject to the BAS rules governing digital operations. We seek comment on this proposal.

5. Digital Class A TV Area for Locally Produced Programming

127. We wish to clarify a matter not explicitly addressed in the Class A TV rules or in the proceeding that established the Class A service. Pursuant to Section 73.6000 of our rules, locally produced programming by Class A stations is programming "(1) Produced within the predicted Grade B contour or within the contiguous predicted Grade B contours of any of the stations in a commonly owned group, or (2) Programming produced at the station's main studio." We here clarify that these provisions also apply to the locally produced programming of digital Class A TV stations. More specifically, if a Class A TV station converts from analog to digital service on its authorized channel, locally produced digital programming will be programming produced within the predicted Grade B contour associated with the station's former analog operation or at the station's main studio. We seek comment on whether a particular digital service contour would be more appropriate with regard to defining the area for locally produced programming of digital Class A TV stations.

I. Petition for Rule Making by the Association of Public Television Stations, the Public Broadcasting Service, and the Corporation for Public Broadcasting

128. On May 29, 2002, the Association of Public Television Stations, the Public Broadcasting Service and the Corporation for Public Broadcasting (referred to jointly as the "LPTV Petitioners") filed a Petition for Rulemaking asking that the Commission initiate a rulemaking proceeding to "ensure the delivery of noncommercial educational and public safety services to all Americans by protecting the existing system of translators and facilitating the development of . . . digital translators and digital on-

[199] Agreement on the Assignment of Low Power Television Stations along the Border, Sept. 14, 1998, United States-Mexico; Agreement on VHF and UHF Television Broadcasting Channels, Jan. 5, 1994, United States-Canada.

[200] 47 C.F.R. §§74.432, 74.632.

channel repeaters."[201] The LPTV Petitioners request that the Commission:

> (1) facilitate the relocation of analog translators that provide a noncommercial service;
>
> (2) facilitate the transition of existing or relocated analog noncommercial educational translators to digital operation;
>
> (3) make additional technical modifications to its rules to support the licensing of translators and repeaters; and
>
> (4) extend public television digital service through new on-channel repeaters or translators and protect these services from unreimbursed displacement or in some instances offer these services additional interference protection.[202]

129. We seek comment on the LPTV Petitioners requests set forth in 1 – 3 above. We believe that the rules we propose today will facilitate the relocation of existing analog translators to new digital operation, including those held by entities that air noncommercial programming. Furthermore, we believe that our proposals will make the necessary technical modifications to our rules to support the licensing of digital translators. At the same time, we seek comment as to whether we should adopt any of the specific proposals set forth in their Petition for Rulemaking. In particular, the LPTV Petitioners request that we:

> (1) authorize translators to operate dual analog/digital channels where channel allotments are available and desired by the licensee;[203]
>
> (2) authorize translators to switch overnight from analog to digital operations where no channels are available or where the licensee is unable to construct dual channels (by use of "fast track licensing" and "check-list" applications);[204]
>
> (3) accept applications for new digital on-channel repeaters that improve the service of an existing full-power transmitter within the predicted DTV service area of that transmitter (such applications to be accepted without waiting for filing windows);[205]
>
> (4) provide such on-channel repeaters the same interference protection granted to the main transmitter with which it is associated;[206]

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[201] LPTV Petitioners' Petition For Rulemaking at 3.

[202] *Id.*

[203] *Id.* at 27.

[204] *Id.* at 27-28.

[205] *Id.* at 28.

[206] *Id.*

(5) accept applications for new digital translators that improve the service area of an existing full-power transmitter within the predicted DTV service area of that transmitter (such applications to be accepted on a first-come, first-served basis without waiting for filing windows);[207] and

(6) accept applications for digital translators and digital on-channel repeaters that extend the service of an existing transmitter beyond the predicted DTV service area of the existing transmitter (such applications to be accepted at any time).[208]

We seek comment on these proposals.

130. The LPTV Petitioners also request that we approve new digital TV translator applications without allowing for competing applications if the applicant demonstrates that the need for a noncommercial educational translator would be greater than the need for any other LPTV or TV translator station. Such showing would be accomplished by demonstrating that the noncommercial educational TV translator applicant would be a first or second television NCE service to ten percent of the population within the proposed NCE translator station's protected contour.[209] We do not intend to consider this proposal. Such a policy is not feasible because we currently have no rules or procedures to define which stations qualify as "noncommercial educational TV translator stations." The LPTV Petitioners do not offer any method for making such a determination. To adopt this procedure, we would have to create a new digital noncommercial educational translator service so that noncommercial educational stations were easily identifiable. The Commission previously determined not to create an NCE translator service when it created the low power television service in 1982.[210] The Commission stated that it perceived several reasons for not imposing strict regulations regarding noncommercial operation of low power stations. With respect to all aspects, except technical ones, the Commission stated that it envisioned "the low power service as an essentially unregulated service."[211] The Commission left to the individual licensees the mode of support, including free and pay programming and the discretion whether to air commercials or not. The Commission specifically stated that it would not concern itself with the question of whether a low power television applicant would qualify as "noncommercial educational" entity. The Commission noted that this was the same approach for television translators which were secondary by nature. We will not depart in this proceeding from the more than twenty years of television translator policy and create a new noncommercial educational digital translator. For all the reasons we have previously recognized, we conclude that the better approach is to allow individual licensees the discretion to operate their translators with or without commercials.

131. To protect existing "public television" translators, the LPTV Petitioners request that the Commission require full power stations to "reimburse the translator licensee for any and all costs

[207] *Id.* at 29.

[208] *Id.* at 30.

[209] *Id.*

[210] *See An Inquiry Into the Future Role of Low Power Television Broadcasting and Television Translators in the National Telecommunications System*, 47 Fed Reg 21468 (1982).

[211] *Id.*

associated with relocation."[212] As stated above, we believe that the low power and television translator digital service should remain a secondary service. The provision of DTV broadcast service by full-service broadcasters remains our top priority, and we conclude that the reimbursement proposal would interfere with the full expansion of DTV full power digital television service. We must continue to exercise restraint in order to accommodate needs associated with the transition of full power stations to digital service.[213] We, therefore, decline to consider this portion of the LPTV Petitioners' Petition for Rulemaking.

IV. ADMINISTRATIVE MATTERS

132. *Ex Parte Rules.* This is a permit but permit-but-disclose notice and comment rulemaking proceeding. Ex parte presentations are permitted, except during the Sunshine Agenda period, provided that they are disclosed as provided in the Commission's Rules. *See generally* 47 C.F.R. §§ 1.1202, 1.1203, and 1.1206(a).

133. *Comment Information.* Pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on or before **[60 days after publication in the Federal Register]**, and reply comments on or before **[90 days after publication in the Federal Register]**. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. See Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24121 (1998). Accessible formats (computer diskettes, large print, audio recording and Braille) are available to persons with disabilities by contacting Brian Millin, of the Consumer & Governmental Affairs Bureau, at (202)418-7426, TTY (202) 418-7365, or at bmillin@fcc.gov.

134. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers are referenced in the caption of the comments, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, U.S. Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of the comment, commenters must submit two additional copies for each additional docket or rulemaking number. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Vistronix, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express

[212] *Id.* at 25.

[213] *See Class A Report and Order*, 15 FCC Rcd at 6395.

Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

135. *Initial Paperwork Reduction Act Analysis.* This *Notice of Proposed Rulemaking* ("*Notice*") may contain new or modified information collections subject to the Paperwork Reduction Act of 1995 (PRA). However, because of the various possible burdens depending on the proposal ultimately adopted by the Commission, the Commission is not seeking public comment or OMB approval on the *Notice* at this time. We will open the PRA burdens in the *Notice* for public comment and submit them for OMB approval at the time final rules are adopted.

136. *Regulatory Flexibility Act.* As required by the Regulatory Flexibility Act,[214] the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities of the proposals addressed in this *Notice of Proposed Rulemaking*. The IRFA is set forth in Appendix A. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines for comments on the *Notice*, and they should have a separate and distinct heading designating them as responses to the IRFA.

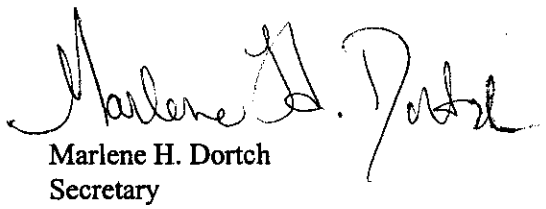
137. *Additional Information.* For additional information on this proceeding, please contact Keith Larson, Media Bureau at (202) 418-2607.

V. ORDERING CLAUSES

138. Accordingly, IT IS ORDERED that, pursuant to the authority contained in sections 4(i) & (j), 303, 307, 309 and 336 of the Communications Act of 1934 as amended, 47 U.S.C. §§ 154(i) & (j), 303, 307, 309 and 336, this *Notice of Proposed Rule Making* IS ADOPTED.

139. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this *Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with the Regulatory Flexibility Act.[215]

FEDERAL COMMUNICATIONS COMMISSION



Marlene H. Dortch
Secretary

[214] *See* 5 U.S.C. § 603.

[215] *See* 5 U.S.C. § 603(a).

APPENDIX A
INITIAL REGULATORY FLEXIBILITY ANALYSIS

1. As required by the Regulatory Flexibility Act of 1980, as amended ("RFA"),[216] the Commission has prepared this Initial Regulatory Flexibility Analysis ("IRFA") of the possible significant economic impact on small entities by the policies and rules proposed in this *Notice of Proposed Rulemaking* ("*Notice*"). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Notice* provided above in paragraph 133. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.[217] In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register.[218]

A. Need for and Objectives of the Proposed Rules.

2. As described in the *Notice*, the proposed rules are intended to permit low power television ("LPTV"), television translator, and television booster stations to transition to digital service. Provisions in the *Notice* may also facilitate the digital transition of Class A TV stations. Beginning in 1987, the Commission undertook to bring the most up-to-date technology to broadcast television. That resulted in several Commission decisions, including those adopting a digital television (DTV) standard, DTV service rules, and a Table of DTV Allotments. The rules proposed in the *Notice* are a fundamental part of the Commission's effort to establish rules to help effectuate the transition of the nation's television broadcast service from analog to digital format.

3. The proposed rules are intended to meet the need recognized by the Commission to provide flexible and affordable opportunities for low power digital service, both through the digital conversion of existing analog service and, where spectrum is available, new digital stations. The Commission's goals are to hasten the transition of LPTV and TV translator stations to digital operations, and to do so in a manner that minimizes disruption of existing service to the consumers served by analog LPTV and translator stations. The following proposals in the *Notice* serve as examples of how the Commission seeks to realize these objectives. As one example, the *Notice* seeks comment on flexible means for digital translator operations, including combining the signals of two or more DTV broadcast station signals on a translator's transmitted output channel, provided such operations are technically and economically feasible. The *Notice* also proposes to permit digital LPTV stations to provide ancillary and supplementary services upon meeting a minimum video program service requirement, and seeks to impose as few interference requirements on digital low power service stations as necessary to ensure interference-free operation. In addition, to expedite authorization of service, the *Notice* proposes that LPTV and translator operators be permitted to convert to digital on their existing analog channels by applying for a minor facilities change at any time. The *Notice* also seeks comment on filing procedures for new digital stations that would facilitate the transition of existing LPTV and translator service and

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[216] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

[217] *See* 5 U.S.C. § 603(a).

[218] *See Id.*

quicken the authorization of digital service.

B. Legal Basis.

4. The authority for the action proposed in this rulemaking is contained in Sections 4(i) & (j), 303, 307, 309 and 336 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i) & (j), 303, 307, 309 and 336.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply.

5. The RFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the proposed rules.[219] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental entity."[220] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[221] A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration ("SBA").[222]

6. In this context, the application of the statutory definition to television stations is of concern. An element of the definition of "small business" is that the entity not be dominant in its field of operation. We are unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the estimates that follow of small businesses to which rules may apply do not exclude any television station from the definition of a small business on this basis and therefore might be over-inclusive.

7. An additional element of the definition of "small business" is that the entity must be independently owned and operated. It is difficult at times to assess these criteria in the context of media entities and our estimates of small businesses might therefore be over inclusive.

8. **Class A TV, LPTV, TV translator, and TV booster stations.** The proposed rules and policies would apply to licensees of LPTV, TV translator, and TV booster stations, and to potential licensees in these television services. Certain rules and policies would also apply to licensees of Class A TV stations. The Small Business Administration defines a television broadcasting station that has no more than $12 million in annual receipts as a small business.[223] Television broadcasting consists of

[219] 5 U.S.C. § 603(b)(3).

[220] 5 U.S.C. § 601(6).

[221] 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

[222] 15 U.S.C. § 632.

[223] 13 C.F.R. § 121.201 (North American Industry Classification System ("NAICS") Code 515120).

establishments primarily engaged in broadcasting images together with sound, including the production or transmission of visual programming which is broadcast to the public on a predetermined schedule.[224] Included in this category are establishments primarily engaged in television broadcasting and which produce programming in their own studios.[225] Separate establishments primarily engaged in producing programming are classified under other NAICS numbers.[226]

9. Currently, there are approximately 2,100 licensed LPTV stations, 600 licensed Class A stations, 4,700 licensed TV translators and 11 TV booster stations.[227] According to Commission staff review of the BIA Publications, Inc., Master Access Television Analyzer Database, virtually all LPTV broadcast stations, including LPTV stations that have converted to Class A status, have revenues of less than $12 million. We note, however, that under the SBA's definition, revenue of affiliates that are not LPTV stations should be aggregated with the LPTV station revenues in determining whether a concern is small. Our estimate may thus overstate the number of small entities since the revenue figure on which it is based does not include or aggregate revenues from non-LPTV affiliated companies. We do not have data on revenues of TV translator or TV booster stations, but virtually all of these entities are also likely to have revenues of less than $12 million and thus may be categorized as small, except to the extent that revenues of affiliated non-translator or booster entities should be considered.

10. **Cable and Other Program Distribution.** Cable systems often receive the television service transmitted over the cable system from a TV translator or LPTV station. Thus, cable systems may also be affected by the rules proposed in the *Notice*. The SBA has developed a small business size standard for cable and other program distribution services, which includes all such companies generating $12.5 million or less in revenue annually.[228] This category includes, among others, cable operators, direct broadcast satellite ("DBS") services, home satellite dish ("HSD") services, multipoint distribution services ("MDS"), multichannel multipoint distribution service ("MMDS"), Instructional Television Fixed Service ("ITFS"), local multipoint distribution service ("LMDS"), satellite master antenna television ("SMATV") systems, and open video systems ("OVS"). According to Census Bureau data, there are 1,311 total cable and other pay television service firms that operate throughout the year of which 1,180 have less than $10 million in revenue.[229] We address below each service individually to

[224] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Subject Series – Source of Receipts, Information Sector 51, Appendix B at B-7-8 (2000).

[225] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Subject Series – Source of Receipts, Information Sector 51, Appendix B at B-7 (2000).

[226] NAICS Code 512110 (Motion Picture and Video Production); NAICS Code 512120 (Motion Picture and Video Distribution); NAICS Code 512191 (Teleproduction and Other Post-Production Services); NAICS Code 512199 (Other Motion Picture and Video Industries).

[227] *Public Notice*, "Broadcast Station Totals as of March 31, 2003" (May 5, 2003).

[228] 13 C.F.R. § 121.201 (NAICS Code 517510). This NAICS Code applies to all services listed in this paragraph.

[229] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Subject Series – Establishment and Firm Size, Information Sector 51, Table 4 at 50 (2000). The amount of $10 million was used to estimate the number of small business firms because the relevant Census categories stopped at $9,999,999 and began at $10,000,000. No category for $12.5 million existed. Thus, the number is as accurate as it is possible to calculate with the available information.

provide a more precise estimate of small entities.

11. **Cable Operators.** The Commission has developed, with SBA's approval, our own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide.[230] We last estimated that there were 1,439 cable operators that qualified as small cable companies.[231] Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, we estimate that there are fewer than 1,439 small entity cable system operators that may be affected by the decisions and rules proposed in this *Notice*.

12. The Communications Act, as amended, also contains a size standard for a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate less than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed $250,000,000."[232] The Commission has determined that there are 68,500,000 subscribers in the United States. Therefore, an operator serving fewer than 685,000 subscribers shall be deemed a small operator if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed $250 million in the aggregate.[233] Based on available data, we find that the number of cable operators serving 685,000 subscribers or less totals approximately 1,450.[234] Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed $250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

13. **Direct Broadcast Satellite ("DBS") Service.** Because DBS provides subscription services, DBS falls within the SBA-recognized definition of Cable and Other Program Distribution services.[235] This definition provides that a small entity is one with $12.5 million or less in annual receipts.[236] There are four licensees of DBS services under Part 100 of the Commission's Rules. Three of those licensees are currently operational. Two of the licensees that are operational have annual revenues that may be in excess of the threshold for a small business.[237] The Commission, however, does not collect annual revenue data for DBS and, therefore, is unable to ascertain the number of small DBS licensees that could

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[230] 47 C.F.R. § 76.901(e). The Commission developed this definition based on its determinations that a small cable system operator is one with annual revenues of $100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd. 7393 (1995).

[231] Paul Kagan Associates, Inc., Cable TV Investor, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[232] 47 U.S.C. § 543(m)(2).

[233] 47 C.F.R. § 76.1403(b).

[234] Paul Kagan Associates, Inc., Cable TV Investor, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[235] 13 C.F.R. § 121.201 (NAICS Code 517510).

[236] *Id.*

[237] *Id.*

be impacted by these proposed rules. DBS service requires a great investment of capital for operation, and we acknowledge, despite the absence of specific data on this point, that there are entrants in this field that may not yet have generated $12.5 million in annual receipts, and therefore may be categorized as a small business, if independently owned and operated. Therefore, we will assume all four licensees are small, for the purpose of this analysis.

14. **Home Satellite Dish ("HSD") Service.** Because HSD provides subscription services, HSD falls within the SBA-recognized definition of Cable and Other Program Distribution services.[238] This definition provides that a small entity is one with $12.5 million or less in annual receipts.[239] The market for HSD service is difficult to quantify. Indeed, the service itself bears little resemblance to other MVPDs. HSD owners have access to more than 265 channels of programming placed on C-band satellites by programmers for receipt and distribution by MVPDs, of which 115 channels are scrambled and approximately 150 are unscrambled.[240] HSD owners can watch unscrambled channels without paying a subscription fee. To receive scrambled channels, however, an HSD owner must purchase an integrated receiver-decoder from an equipment dealer and pay a subscription fee to an HSD programming package. Thus, HSD users include: (1) viewers who subscribe to a packaged programming service, which affords them access to most of the same programming provided to subscribers of other MVPDs; (2) viewers who receive only non-subscription programming; and (3) viewers who receive satellite programming services illegally without subscribing. Because scrambled packages of programming are most specifically intended for retail consumers, these are the services most relevant to this discussion.[241] As noted, *supra*, for the category Cable and Other Program Distribution, most of providers of these services are considered small.

15. **Multipoint Distribution Service ("MDS"), Multichannel Multipoint Distribution Service ("MMDS") Instructional Television Fixed Service ("ITFS") and Local Multipoint Distribution Service ("LMDS").** MMDS systems, often referred to as "wireless cable," transmit video programming to subscribers using the microwave frequencies of the MDS and ITFS services.[242] LMDS is a fixed broadband point-to-multipoint microwave service that provides for two-way video telecommunications.[243]

16. In connection with the 1996 MDS auction, the Commission defined small businesses as entities that had annual average gross revenues of less than $40 million in the previous three calendar years.[244] This definition of a small entity in the context of MDS auctions has been approved by the

[238] 13 C.F.F. § 121.201 (NAICS Code 517510).

[239] *Id.*

[240] *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming,* 12 FCC Rcd 4358, 4385 (1996) (*"Third Annual Report"*).

[241] *Id.* at 4385.

[242] *Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding,* 10 FCC Rcd at 9589, 9593 (1995) (*"ITFS Order"*).

[243] *See Local Multipoint Distribution Service,* 12 FCC Rcd 12545 (1997) (*"LMDS Order"*).

[244] 47 C.F.R. § 21.961(b)(1).

SBA.[245] The MDS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas ("BTAs"). Of the 67 auction winners, 61 met the definition of a small business. In addition, MDS includes licensees of stations authorized prior to the auction. As noted, the SBA has developed a definition of small entities for pay television services, which includes all such companies generating $12.5 million or less in annual receipts.[246] This definition includes multipoint distribution services, and thus applies to MDS licensees and wireless cable operators that did not participate in the MDS auction. Information available to us indicates that there are approximately 850 of these licensees and operators that do not generate revenue in excess of $12.5 million annually. Therefore, using the SBA small business size standard, we find that there are approximately 850 small MDS providers.

17. The SBA definition of small entities for Cable and Other Distribution services, which includes such companies generating $12.5 million in annual receipts, seems reasonably applicable to ITFS.[247] There are presently 2,032 ITFS licensees. All but 100 of these licenses are held by educational institutions. Educational institutions are included in the definition of a small business.[248] However, we do not collect annual revenue data for ITFS licensees, and are not able to ascertain how many of the 100 non-educational licensees would be categorized as small under the SBA definition. Thus, we tentatively conclude that at least 1,932 licensees are small businesses.

18. Additionally, the auction of the 1,030 LMDS licenses began on February 18, 1998, and closed on March 25, 1998. The Commission defined "small entity" for LMDS licenses as an entity that has average gross revenues of less than $40 million in the three previous calendar years.[249] An additional classification for "very small business" was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than $15 million for the preceding calendar years.[250] These regulations defining "small entity" in the context of LMDS auctions have been approved by the SBA.[251] There were 93 winning bidders that qualified as small entities in the LMDS auctions. A total of 93 small and very small business bidders won approximately 277 A Block licenses and 387 B Block licenses. On March 27, 1999, the Commission re-auctioned 161 licenses; there were 40 winning bidders. Based on this information, we conclude that the number of small LMDS licenses will include the 93 winning bidders in the first auction and the 40 winning bidders in the re-auction, for a total of 133 small entity LMDS providers as defined by the SBA and the Commission's auction rules.

19. **Satellite Master Antenna Television ("SMATV") Systems.** The SBA definition of small entities for Cable and Other Program Distribution services includes SMATV services and, thus, small

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[245] *See ITFS Order*, 10 FCC Rcd at 9589.

[246] 13 C.F.R. § 121.201 (NAICS Code 517510).

[247] *Id.*

[248] SBREFA also applies to nonprofit organizations and governmental organizations such as cities, counties, towns, townships, villages, school districts, or special districts, with populations of less than 50,000. 5 U.S.C. § 601(5).

[249] *See LMDS Order*, 12 FCC Rcd at 12545.

[250] *Id.*

[251] *See* Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau (FCC) from A. Alvarez, Administrator, SBA (January 6, 1998).

entities are defined as all such companies generating $12.5 million or less in annual receipts.[252] Industry sources estimate that approximately 5,200 SMATV operators were providing service as of December 1995.[253] Other estimates indicate that SMATV operators serve approximately 1.5 million residential subscribers as of July 2001.[254] The best available estimates indicate that the largest SMATV operators serve between 15,000 and 55,000 subscribers each. Most SMATV operators serve approximately 3,000-4,000 customers. Because these operators are not rate regulated, they are not required to file financial data with the Commission. Furthermore, we are not aware of any privately published financial information regarding these operators. As noted, *supra*, for the category Cable and Other Program Distribution, most of providers of these services are considered small.

20. **Open Video Systems ("OVS").** Because OVS operators provide subscription services,[255] OVS falls within the SBA-recognized definition of cable and other program distribution services.[256] This definition provides that a small entity is one with $ 12.5 million or less in annual receipts.[257] The Commission has certified 25 OVS operators with some now providing service. Affiliates of Residential Communications Network, Inc. ("RCN") received approval to operate OVS systems in New York City, Boston, Washington, D.C. and other areas. RCN has sufficient revenues to assure us that they do not qualify as small business entities. Little financial information is available for the other entities authorized to provide OVS that are not yet operational. Given that other entities have been authorized to provide OVS service but have not yet begun to generate revenues, we conclude that at least some of the OVS operators qualify as small entities.

21. **Electronics Equipment Manufacturers.** Rules adopted in this proceeding could affect manufacturers of digital transmitting and receiving equipment and other types of consumer electronics equipment. The SBA has developed definitions of small entity for manufacturers of audio and video equipment[258] as well as radio and television broadcasting and wireless communications equipment.[259] These categories both include all such companies employing 750 or fewer employees. The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment used by consumers, as compared to industrial use by television licensees and related businesses. Therefore, we will utilize the SBA definitions applicable to manufacturers of audio and visual equipment and radio and television broadcasting and wireless communications equipment, since these are the two closest NAICS Codes applicable to the consumer electronics equipment manufacturing industry. However, these NAICS categories are broad and specific figures are not available as to how many of these establishments

[252] 13 C.F.R. § 121.201 (NCAIS Code 517510).

[253] *See Third Annual Report*, 12 FCC Rcd at 4403-4.

[254] *See Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, 17 FCC Rcd 1244, 1281 (2001) ("*Eighth Annual Report*").

[255] *See* 47 U.S.C. § 573.

[256] 13 C.F.R. § 121.201 (NAICS Code 517510).

[257] *Id.*

[258] 13 CFR § 121.201 (NAICS Code 334310).

[259] 13 CFR § 121.201 (NAICS Code 334220).

manufacture consumer equipment. According to the SBA's regulations, an audio and visual equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[260] Census Bureau data indicates that there are 554 U.S. establishments that manufacture audio and visual equipment, and that 542 of these establishments have fewer than 500 employees and would be classified as small entities.[261] The remaining 12 establishments have 500 or more employees; however, we are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. Under the SBA's regulations, a radio and television broadcasting and wireless communications equipment manufacturer must also have 750 or fewer employees in order to qualify as a small business concern.[262] Census Bureau data indicates that there 1,215 U.S. establishments that manufacture radio and television broadcasting and wireless communications equipment, and that 1,150 of these establishments have fewer than 500 employees and would be classified as small entities.[263] The remaining 65 establishments have 500 or more employees; however, we are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. We therefore conclude that there are no more than 542 small manufacturers of audio and visual electronics equipment and no more than 1,150 small manufacturers of radio and television broadcasting and wireless communications equipment for consumer/household use.

22. **Computer Manufacturers**. The Commission has not developed a definition of small entities applicable to computer manufacturers. Therefore, we will utilize the SBA definition of electronic computers manufacturing. According to SBA regulations, a computer manufacturer must have 1,000 or fewer employees in order to qualify as a small entity.[264] Census Bureau data indicates that there are 563 firms that manufacture electronic computers and of those, 544 have fewer than 1,000 employees and qualify as small entities.[265] The remaining 19 firms have 1,000 or more employees. We conclude that there are approximately 544 small computer manufacturers.

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[260] 13 CFR § 121.201 (NAICS Code 334310).

[261] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Industry Series – Manufacturing, Audio and Video Equipment Manufacturing, Table 4 at 9 (1999). The amount of 500 employees was used to estimate the number of small business firms because the relevant Census categories stopped at 499 employees and began at 500 employees. No category for 750 employees existed. Thus, the number is as accurate as it is possible to calculate with the available information.

[262] 13 C.F.R. § 121.201 (NAICS Code 517510).

[263] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Industry Series – Manufacturing, Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, Table 4 at 9 (1999). The amount of 500 employees was used to estimate the number of small business firms because the relevant Census categories stopped at 499 employees and began at 500 employees. No category for 750 employees existed. Thus, the number is as accurate as it is possible to calculate with the available information.

[264] 13 C.F.R. § 121.201 (NAICS Code 334111).

[265] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Industry Series – Manufacturing, Electronic Computer Manufacturing, Table 4 at 9 (1999).

D. Description of Projected Reporting, Recordkeeping and other Compliance Requirements.

23. This *Notice of Proposed Rule Making* ("*Notice*") contains additional reporting and recordkeeping requirements. While the requirements proposed in the *Notice* could have an impact on LPTV, Class A, TV translator, and TV booster licensees, and potential licensees in these services, we believe such impact would be similarly costly for both large and small entities. We seek comment on whether others perceive a need for more extensive recordkeeping and, if so, whether the burden would fall on large and small entities differently.

E. Steps Taken to Minimize Significant Impact on Small Entities, and Significant Alternatives Considered.

24. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.[266]

25. The Commission staff is aware that many low power licensees, including smaller entities, operate with limited budgets. Accordingly, in drafting the *Notice*, the staff attempted to propose rules that would impose the least possible burden on all licensees. For example, the proposals concerning interference requirements for digital stations were drafted with the goal of imposing as few requirements as necessary to ensure interference-free operation, as were the proposals for related digital transmission equipment. Similarly, in discussing applications to convert to digital service and applications for new digital service, we have sought comment on whether to provide initial opportunities to existing licensees first, thus limiting the possible need to auction competing applications. This approach, should it be adopted, would help smaller low power licensees who presumably would prefer to avoid an auction for digital licenses.

26. The *Notice* also considers other means of providing flexible and affordable opportunities for low power digital service, including permitting translators to combine the signals of two or more DTV broadcast station signals on a translator's transmitted output channel and permitting digital LPTV stations to provide ancillary and supplementary services upon meeting a minimum video program service requirement. In addition, the *Notice* proposes that LPTV and translator operators be permitted to convert to digital on their existing channels by applying for a minor facilities change at any time.

[266] 5 U.S.C. § 603.

27. In conclusion, we seek comment generally on how adoption of the Commission's general plan, as described in the *Notice*, to facilitate the transition to digital service in the above-referenced industries can be accomplished without imposing undue burden on smaller entities. Suggestions from commenters for alternative proposals or modifications of our proposed rules will be welcome for this purpose.

F. Federal Rules Which Duplicate, Overlap, or Conflict with the Commission's Proposals.

28. None.