

may be employed). In the event of interference caused to any service, greater attenuation may be required.

[62 FR 26712, May 14, 1997, as amended at 63 FR 13552, Mar. 20, 1998; 64 FR 47702, Sept. 1, 1999; 65 FR 41012, July 3, 2000; 65 FR 36378, June 8, 2000; 65 FR 44011, July 17, 2000; 65 FR 45720, July 25, 2000; 65 FR 48183, 48184, Aug. 7, 2000; 65 FR 54804, 54805, Sept. 11, 2000; 65 FR 58467, Sept. 29, 2000; 65 FR 58920, 58921, Oct. 3, 2000; 65 FR 60379, Oct. 11, 2000; 65 FR 70508, 70509, Nov. 24, 2000; 65 FR 76947, Dec. 8, 2000; 66 FR 2336, Jan. 11, 2001; 66 FR 3884, Jan. 17, 2001; 66 FR 9036-9039, Feb. 6, 2001; 66 FR 10208, Feb. 14, 2001; 66 FR 11117-11119, Feb. 22, 2001; 66 FR 12894, 12895, Mar. 1, 2001; 66 FR 13855, 13856, Mar. 8, 2001; 66 FR 18734, Apr. 11, 2001; 66 FR 20607, 20608, Apr. 24, 2001; 66 FR 22448, May 4, 2001, 66 FR 28399, 28400, May 23, 2001; 66 FR 29724-29726, June 1, 2001; 66 FR 31560, 31561, June 12, 2001; 66 FR 39452, July 31, 2001; 66 FR 39682, 39683, Aug. 1, 2001; 66 FR 42613, Aug. 14, 2001; 66 FR 47897, 47898, Sept. 14, 2001; 66 FR 52547, Oct. 16, 2001; 66 FR 53730, Oct. 24, 2001; 66 FR 55892, 55893, Nov. 5, 2001; 66 FR 56616, Nov. 9, 2001; 67 FR 5070, Feb. 4, 2002; 67 FR 6876, Feb. 14, 2002; 67 FR 8906, Feb. 27, 2002; 67 FR 13232, Mar. 21, 2002; 67 FR 5513, Feb. 6, 2002; 67 FR 10847, Mar. 11, 2002; 67 FR 11054, Mar. 12, 2002; 67 FR 15735, Apr. 3, 2002; 67 FR 18832, 18833, Apr. 17, 2002; 67 FR 19693, Apr. 23, 2002; 67 FR 30819, May 8, 2002; 67 FR 34621, 34622, May 15, 2002; 67 FR 44777, July 5, 2002; 67 FR 50603, Aug. 5, 2002; 67 FR 51116, Aug. 7, 2002; 67 FR 51769, 51770, Aug. 9, 2002; 67 FR 61516, Oct. 1, 2002; 67 FR 62399, Oct. 7, 2002; 67 FR 62649, 62650, Oct. 8, 2002; 67 FR 63852, Oct. 16, 2002; 67 FR 70018, Nov. 20, 2002; 67 FR 70177-70179, Nov. 21, 2002; 67 FR 78191-78193, Dec. 23, 2002; 68 FR 503, Jan. 6, 2003; 68 FR 1986, Jan. 15, 2003; 68 FR 2701, Jan. 21, 2003; 68 FR 4394, Jan. 29, 2003; 68 FR 10664, Mar. 6, 2003; 68 FR 12611, Mar. 17, 2003; 68 FR 14166, 14167, Mar. 24, 2003; 68 FR 18135, Apr. 15, 2003; 68 FR 20082, Apr. 24, 2003; 68 FR 23901, May 6, 2003; 68 FR 26497, May 16, 2003; 68 FR 27479, May 20, 2003; 68 FR 38643, June 30, 2003; 68 FR 41284, July 11, 2003; 68 FR 46502, Aug. 6, 2003; 68 FR 51918, Aug. 29, 2003]

EFFECTIVE DATE NOTE: At 67 FR 70018, Nov. 20, 2002, § 73.622 was amended in the Table of Allotments in paragraph (b) under California by adding Avalon, DTV channel 47c. This amendment will become effective 60 days after the concurrence of the Mexican government is obtained. The FCC will publish a document announcing when the concurrence has been obtained and giving the effective date.

EFFECTIVE DATE NOTES: 1. At 68 FR 51918, Aug. 29, 2003, in § 73.622(b), the Table of Digital Television Allotments under South Carolina was amended by removing DTV channel *58 and adding DTV channel *9 at Conway, effective Oct. 14, 2003.

2. At 68 FR 53052, Sept. 9, 2003, in § 73.622(b), the Table of Digital Television Allotments

under Montana was amended by removing DTV channel 15 and adding DTV channel 5 at Butte, effective Oct. 20, 2003.

3. At 68 FR 53053, Sept. 9, 2003, in § 73.622(b), the Table of Digital Television Allotments under Arkansas was amended by removing DTV channel *45 and adding DTV channel *9 at Fayetteville, effective Oct. 20, 2003.

4. At 68 FR 53305, Sept. 10, 2003, in § 73.622(b), the Table of Digital Television Allotments under Michigan was amended by removing DTV channel 56 and adding DTV channel 9c at Sault Saint Marie, effective Oct. 20, 2003.

§ 73.623 DTV applications and changes to DTV allotments.

(a) *General.* This section contains the technical criteria for evaluating applications requesting DTV facilities that do not conform to the provisions of § 73.622 and petitions for rule making to amend the DTV Table of Allotments (§ 73.622(b)). Petitions to amend the DTV Table (other than those also expressly requesting amendment of this section) and applications for new DTV broadcast stations or for changes in authorized DTV stations filed pursuant to this section will not be accepted for filing if they fail to comply with the requirements of this section.

(b) In considering petitions to amend the DTV Table and applications filed pursuant to this section, the Commission will use geographic coordinates defined in § 73.622(d) as reference points in determining allotment separations and evaluating interference potential.

(c) *Minimum technical criteria for modification of DTV allotments included in the initial DTV Table of Allotments and for applications filed pursuant to this section.* No petition to modify a channel allotment included in the initial DTV Table of Allotments or application for authority to construct or modify a DTV station assigned to such an allotment, filed pursuant to this section, will be accepted unless it shows compliance with the requirements of this paragraph.

(1) Requests filed pursuant to this paragraph must demonstrate compliance with the principal community coverage requirements of section 73.625(a).

(2) Requests filed pursuant to this paragraph must demonstrate that the requested change would not result in more than an additional 2 percent the

§ 73.623

47 CFR Ch. I (10–1–03 Edition)

population served by another station being subject to interference; provided, however, that no new interference may be caused to any station that already experiences interference to 10 percent or more of its population or that would result in a station receiving interference in excess of 10 percent of its population. The station population values for existing NTSC service and DTV service contained in Appendix B of the *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order* in MM Docket No. 87–268, FCC 98–24, adopted January 29, 1998, referenced in § 73.622(c), are to be used for the purposes of determining whether a power increase or other change is permissible under this de minimis standard. For evaluating compliance with this requirement, interference to populations served is to be predicted based on the procedure set forth in *OET Bulletin No. 69*, including population served within service areas determined in accordance with section 73.622(e), consideration of whether F(50,10) undesired signals will exceed the following desired-to-undesired (D/U) signal ratios, assumed use of a directional receiving antenna, and use of the terrain dependent Longley-Rice point-to-point propagation model. Copies of *OET Bulletin No. 69* may be inspected during normal business hours at the: Federal Communications Commission, Room CY–C203, 445 12th Street, SW., Reference Information Center, Washington, DC 20554. These documents are also available through the Internet on the *FCC Home Page* at <http://www.fcc.gov>. The threshold levels at which interference is considered to occur are:

| | D/U Ratio |
|--|-----------|
| Co-channel: | |
| DTV-into-analog TV | +34 |
| Analog TV-into-DTV | +2 |
| DTV-into-DTV | +15 |
| First Adjacent Channel: | |
| Lower DTV-into-analog TV | –14 |
| Upper DTV-into-analog TV | –17 |
| Lower analog TV-into-DTV | –48 |
| Upper analog TV-into-DTV | –49 |
| Lower DTV-into-DTV | –28 |
| Upper DTV-into-DTV | –26 |
| Other Adjacent Channel (Channels 14–69 only) | |
| DTV-into-analog TV, where N = analog TV channel and DTV Channel: | |
| N–2 | –24 |
| N+2 | –28 |

| | D/U Ratio |
|------------|-----------|
| N–3 | –30 |
| N+3 | –34 |
| N–4 | –34 |
| N+4 | –25 |
| N–7 | –35 |
| N+7 | –43 |
| N–8 | –32 |
| N+8 | –43 |
| N+14 | –33 |
| N+15 | –31 |

(3) The values in paragraph (c)(2) of this section for co-channel interference to DTV service are only valid at locations where the signal-to-noise ratio is 28 dB or greater for interference from DTV and 25 dB or greater for interference 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, D/U values for co-channel interference to DTV are as follows:

(i) For DTV-to-DTV interference, the minimum D/U ratios are computed from the following formula:

$$D/U = 15 + 10 \log_{10} [1.0 / (1.0 - 10^{-x/10})]$$

Where x = S/N–15.19 (minimum signal to noise ratio)

(ii) For analog-to-DTV interference, the minimum D/U ratios are found from the following Table (for values between measured values, linear interpolation can be used):

| Signal-to-noise ratio (dB) | Desired-to-undesired ratio (dB) |
|----------------------------|---------------------------------|
| 16.00 | 21.00 |
| 16.35 | 19.94 |
| 17.35 | 17.69 |
| 18.35 | 16.44 |
| 19.35 | 7.19 |
| 20.35 | 4.69 |
| 21.35 | 3.69 |
| 22.35 | 2.94 |
| 23.35 | 2.44 |
| 25.00 | 2.00 |

(4) Due to the frequency spacing that exists between Channels 4 and 5, between Channels 6 and 7, and between Channels 13 and 14, the minimum adjacent channel technical criteria specified in paragraph (c)(2) of this section shall not be applicable to these pairs of channels (see § 73.603(a)).

(5) A DTV station application that proposes to expand the DTV station's allotted or authorized coverage area in any direction will not be accepted if it is predicted to cause interference to a Class A TV station or to a digital Class A TV station authorized pursuant to Subpart J of this part, within the protected contour defined in §73.6010 of this part. This paragraph applies to all DTV applications filed after May 1, 2000, and to DTV applications filed between December 31, 1999 and April 30, 2000 unless the DTV station licensee or permittee notified the Commission of its intent to "maximize" by December 31, 1999.

(i) Interference is predicted to occur if the ratio in dB of the field strength of a Class A TV station at its protected contour to the field strength resulting from the facilities proposed in the DTV application (calculated using the appropriate F(50,10) chart from Figure 9a, 10a, or 10c of §73.699 of this part) fails to meet the D/U signal ratios for "DTV-into-analog TV" specified in paragraph (c)(2) of this section.

(ii) Interference is predicted to occur if the ratio in dB of the field strength of a digital Class A TV station at its protected contour to the field strength resulting from the facilities proposed in the DTV application (calculated using the appropriate F(50,10) chart from Figure 9a, 10a, or 10c of §73.699 of this part) fails to meet the D/U signal

ratios for "DTV-into-DTV" specified in paragraphs (c)(2) and (c)(3) of this section.

(iii) In support of a request for waiver of the interference protection requirements of this section, an applicant for a DTV broadcast station may make full use of terrain shielding and Longley-Rice terrain dependent propagation methods to demonstrate that the proposed facility would not be likely to cause interference to Class A TV stations. Guidance on using the Longley-Rice methodology is provided in *OET Bulletin No. 69*, which is available through the Internet at <http://www.fcc.gov/oet/info/documents/bulletins/169>.

(d) *Minimum geographic spacing requirements for DTV allotments not included in the initial DTV Table of Allotments.* No petition to add a new channel to the DTV Table of Allotments or modify an allotment not included in the initial DTV Table will be accepted unless it shows compliance with the requirements of this paragraph.

(1) Requests filed pursuant to this paragraph must demonstrate compliance with the principle community coverage requirements of section 73.625(a).

(2) Requests filed pursuant to this paragraph must meet the following requirements for geographic spacing with regard to all other DTV stations, DTV allotments and analog TV stations:

| Channel relationship | Separation requirement |
|--|--|
| VHF Channels 2-13: Co-channel, DTV to DTV | Zone I: 244.6 km. Zones II & III: 273.6 km. |
| Co-channel, DTV to analog TV | Zone I: 244.6 km. Zone II & III: 273.6 km. |
| Adjacent Channel: DTV to DTV | No allotments permitted between: Zone I: 20 km and 110 km. Zones II & III: 23 km and 110 km. |
| DTV to analog TV | No allotments permitted between: Zone I: 9 km and 125 km. Zone II & III: 11 km and 125 km. |
| UHF Channels: Co-channel, DTV to DTV | Zone I: 196.3 km. Zone II & III: 223.7 km. |
| Co-channel, DTV to analog TV | Zone I: 217.3 km. Zone II & III: 244.6 km. |
| Adjacent Channel: DTV to DTV | No allotments permitted between: All Zones: 24 km and 110 km. |
| DTV to analog TV | No allotments permitted between: All Zones: 12 km and 106 km. |

| Channel relationship | Separation requirement |
|---|---|
| Taboo Channels, DTV to analog TV only (DTV channels +/-2, +/-3, +/-4, +/-7, +/-8, and 14 or 15 channels above the analog TV channel). | No allotments permitted between: Zone I: 24.1 km and 80.5 km. Zone II & III: 24.1 km and 96.6 km. |

(3) Zones are defined in §73.609. The minimum distance separation between a DTV station in one zone and an analog TV or DTV station in another zone shall be that of the zone requiring the lower separation.

(4) Due to the frequency spacing that exists between Channels 4 and 5, between Channels 6 and 7, and between Channels 13 and 14, the minimum geographic spacing requirements specified in paragraph (d)(3) of this section shall not be applicable to these pairs of channels (§73.603(a)).

(e) *Protection of land mobile operations on channels 14–20.* The Commission will not accept petitions to amend the DTV Table of Allotments, applications for new DTV stations, or applications to

change the channel or location of authorized DTV stations that would use channels 14–20 where the distance between the DTV reference point as defined in section 73.622(d), would be located less than 250 km from the city center of a co-channel land mobile operation or 176 km from the city center of an adjacent channel land mobile operation. Petitions to amend the DTV Table, applications for new DTV stations, or requests to modify the DTV Table that do not meet the minimum DTV-to-land mobile spacing standards will, however, be considered where all affected land mobile licensees consent to the requested action. Land mobile operations are authorized on these channels in the following markets:

| City | Channels | Latitude | Longitude |
|-------------------------|------------------|-----------|------------|
| Boston, MA | 14, 16 | 42°21'24" | 71°03'25" |
| Chicago, IL | 14, 15 | 41°52'28" | 87°38'22" |
| Dallas, TX | 16 | 32°47'09" | 96°47'37" |
| Houston, TX | 17 | 29°45'26" | 95°21'37" |
| Los Angeles, CA | 14, 16, 20 | 34°03'15" | 118°14'28" |
| Miami, FL | 14 | 25°46'37" | 80°11'32" |
| New York, NY | 14, 15 | 40°45'06" | 73°59'39" |
| Philadelphia, PA | 19, 20 | 39°56'58" | 75°09'21" |
| Pittsburgh, PA | 14, 18 | 40°26'19" | 80°00'00" |
| San Francisco, CA | 16, 17 | 37°46'39" | 122°24'40" |
| Washington, DC | 17, 18 | 38°53'51" | 77°00'33" |

(f) Parties requesting new allotments on channel 6 be added to the DTV Table must submit an engineering study demonstrating that no interference would be caused to existing FM radio stations on FM channels 200–220.

(g) *Negotiated agreements on interference.* Notwithstanding the minimum technical criteria for DTV allotments specified above, DTV stations operating on allotments that are included in the initial DTV Table may: operate with increased ERP and/or antenna HAAT that would result in additional interference to another DTV station or an analog TV station if that station agrees, in writing, to accept the additional interference; and/or implement an exchange of channel allotments between two or more licensees or permit-

tees of TV stations in the same community, the same market, or in adjacent markets provided, however, that the other requirements of this section and of section 73.622 are met with respect to each such application. Such agreements must be submitted with the application for authority to construct or modify the affected DTV station or stations. The larger service area resulting from a negotiated change in ERP and/or antenna HAAT will be protected in accordance with the provisions of paragraph (c) of this section. Negotiated agreements under

this paragraph can include the exchange of money or other considerations from one station to another, including payments to and from non-commercial television stations assigned reserved channels. Applications submitted pursuant to the provisions of this paragraph will be granted only if the Commission finds that such action is consistent with the public interest.

(h) *DTV application processing.* (1) DTV applications for a construction permit or a modified construction permit pending as of January 18, 2001:

(i) Shall be afforded the interference protection set forth in paragraph (c) or (d) of this section, as applicable:

(A) By all NTSC minor change applications;

(B) By NTSC new station applications, except those covered by paragraphs (h)(1)(ii)(G) and (h)(1)(iii)(D) of this section;

(C) By all rulemaking petitions to amend the NTSC TV table of allotments;

(D) By DTV applications filed after January 18, 2001; and

(E) By rulemaking petitions to amend the DTV table of allotments filed after January 18, 2001;

(ii) Must demonstrate the requisite interference protection set forth in paragraph (c) or (d) of this section, as applicable, to:

(A) DTV licensed stations;

(B) DTV construction permits;

(C) Existing DTV allotments;

(D) Rulemaking petitions to amend the DTV table of allotments for which a Notice of Proposed Rule Making has been released and the comment deadline specified therein has passed prior to the filing date of the DTV application;

(E) NTSC stations with licenses covering construction permits that were granted before the DTV application was filed;

(F) NTSC construction permits that were granted before the DTV application was filed;

(G) Applications for new NTSC television stations that were in groups of mutually exclusive applications on file prior to July 1, 1997, regardless of whether they are the only applications that remain pending from their group.

(iii) That do not provide the requisite interference protection set forth in paragraph (c) or (d) of this section, as applicable, to the following applications and petitions will be deemed mutually exclusive with those applications and petitions:

(A) Other DTV applications pending as of January 18, 2001;

(B) Rulemaking petitions to amend the DTV table of allotments filed on or before January 18, 2001 for which a Notice of Proposed Rule Making had been released and the comment deadline specified therein had not passed prior to the filing date of the DTV application;

(C) Rulemaking petitions to amend the DTV table of allotments filed on or before January 18, 2001 for which a Notice of Proposed Rule Making had not been released; and

(D) Applications for new NTSC stations that are not covered by paragraph (h)(1)(ii)(G) of this section and were filed and accepted for filing on or before January 18, 2001 that:

(1) Were filed by post-auction winners pursuant to § 73.5005.

(2) Are part of a settlement agreement on-file with the Commission that would result in the grant of the NTSC application; or

(3) Are cut-off singletons.

(2) DTV applications for a construction permit or a modified construction permit filed after January 18, 2001:

(i) Shall be afforded the interference protection set forth in paragraph (c) or (d) of this section, as applicable:

(A) By all NTSC minor change applications;

(B) By NTSC new station applications, except those covered by paragraph (h)(2)(ii)(H) and (I) of this section;

(C) By all rulemaking petitions to amend the NTSC TV table of allotments except those filed by NTSC applicants in those groups defined in (h)(2)(ii)(I) of this section for which a Notice of Proposed Rule Making has been released and the comment deadline specified therein has passed prior to the filing date of the DTV application;

(D) By later-filed DTV applications; and

(E) By later-filed rulemaking petitions to amend the DTV table of allotments;

(ii) Must demonstrate the requisite interference protection set forth in paragraph (c) or (d) of this section, as applicable, to:

- (A) DTV licensed stations;
- (B) DTV construction permits;
- (C) Earlier-filed DTV applications;
- (D) Existing DTV allotments;

(E) Rulemaking petitions to amend the DTV table of allotments for which a Notice of Proposed Rule Making has been released and the comment deadline specified therein has passed prior to the filing date of the DTV application;

(F) NTSC stations with licenses covering construction permits that were granted before the DTV application was filed;

(G) NTSC construction permits that were granted before the DTV application was filed; and

(H) Earlier-filed and accepted for filing applications for new NTSC stations that are not covered by paragraph (h)(2)(ii)(I) of this section, and that:

(I) Were filed by post-auction winners pursuant to § 73.5005.

(2) Are part of a settlement agreement on-file with the Commission that would result in the grant of the NTSC application; or

(3) Are cut-off singletons;

(I) Applications for new NTSC television stations that were in groups of mutually exclusive applications on file prior to July 1, 1997, regardless of whether they are the only applications that remain pending from their group;

(J) Rulemaking petitions to amend the NTSC table of allotments filed by applicants defined in (h)(2)(ii)(I) of this section for which a Notice of Proposed Rule Making has been released and the comment deadline specified therein has passed prior to the filing of the DTV application.

(iii) That do not provide the requisite interference protection set forth in paragraph (c) or (d) of this section, as applicable, to the following applications and petitions will be deemed mutually exclusive with those applications and petitions:

(A) Other DTV applications filed the same day;

(B) Rulemaking petitions to amend the DTV table of allotments for which a Notice of Proposed Rule Making had been released and the comment deadline specified therein had not passed prior to the filing date of the DTV application; and

(C) Earlier-filed rulemaking petitions to amend the DTV table of allotments for which a Notice of Proposed Rule Making had not been released.

(3) DTV applicants, DTV applicants and NTSC applicants, or DTV applicants and DTV rulemaking petitioners that are mutually exclusive pursuant to this section will be notified by Public Notice and provided with a 90-day period of time to resolve their mutual exclusivity via engineering amendment or settlement. Those applications and petitions that remain mutually exclusive upon conclusion of the 90-day settlement period will be dismissed.

[62 FR 26719, May 14, 1997, as amended at 63 FR 13560, Mar. 20, 1998; 64 FR 4327, Jan. 28, 1999; 65 FR 30002, May 10, 2000; 65 FR 58467, Sept. 29, 2000; 66 FR 9984, Feb. 13, 2001; 66 FR 65134, Dec. 18, 2001]

§ 73.624 Digital television broadcast stations.

(a) Digital television (“DTV”) broadcast stations are assigned channels 6 MHz wide. Initial eligibility for licenses for DTV broadcast stations is limited to persons that, as of April 3, 1997, are licensed to operate a full power television broadcast station or hold a permit to construct such a station (or both).

(b) DTV broadcast station permittees or licensees must transmit at least one over-the-air video program signal at no direct charge to viewers on the DTV channel. Until such time as a DTV station permittee or licensee ceases analog transmissions and returns that spectrum to the Commission, and except as provided in paragraph (i) of this section; at any time that a DTV broadcast station permittee or licensee transmits a video program signal on its analog television channel, it must also transmit at least one over-the-air video program signal on the DTV channel. In addition, the DTV broadcast station permittee or licensee is subject to the