

## § 73.615

boundary, any antenna HAAT can be used. Also, for values of antenna HAAT greater than 2,300 meters the maximum ERP is the lower limit specified for each equation.

(6) The effective radiated power in any horizontal or vertical direction may not exceed the maximum values permitted by this section.

(7) The effective radiated power at any angle above the horizontal shall be as low as the state of the art permits, and in the same vertical plane may not exceed the effective radiated power in either the horizontal direction or below the horizontal, whichever is greater.

(c) *Determination of applicable rules.* The zone in which the transmitter of a television station is located or proposed to be located determines the applicable rules with respect to maximum antenna heights and powers for VHF stations when the transmitter is located in Zone I and the channel to be employed is located in Zone II, or the transmitter is located in Zone II and the channel to be employed is located in Zone I.

[28 FR 13660, Dec. 14, 1963, as amended at 42 FR 20823, Apr. 22, 1977; 42 FR 48881, Sept. 26, 1977; 47 FR 35990, Aug. 18, 1982; 50 FR 23698, June 5, 1985; 56 FR 49707, Oct. 1, 1991; 58 FR 51250, Oct. 1, 1993]

### § 73.615 Administrative changes in authorizations.

In the issuance of television broadcast station authorizations, the Commission will specify the transmitter output power and effective radiated power to the nearest 0.1 dBk. Power specified by kW shall be obtained by converting dBk to kW to 3 significant figures. Antenna heights above average terrain will be specified to the nearest meter. Midway figures will be authorized in the lower alternative.

[50 FR 23698, June 5, 1985]

### § 73.616 Post-transition DTV station interference protection.

(a) A petition to add a new channel to the post-transition DTV Table of Allotments contained in § 73.622(i) of this subpart will not be accepted unless it meets: the DTV-to-DTV geographic spacing requirements of § 73.623(d) with respect to all existing DTV allotments in the post-transition DTV Table; the

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principle community coverage requirements of § 73.625(a); the Class A TV and digital Class A TV protection requirements in paragraph (f) of this section; the land mobile protection requirements of § 73.623(e); and the FM radio protection requirement of § 73.623(f).

(b) The reference coordinates of a post-transition DTV allotment shall be the authorized transmitter site, or, where such a transmitter site is not available for use as a reference point, the coordinates as designated in the FCC order creating or modifying the post-transition DTV Table of Allotments.

(c) The protected facilities of a post-transition DTV allotment shall be the facilities (effective radiated power, antenna height and antenna directional radiation pattern, if any) authorized by a construction permit or license, or, where such an authorization is not available for establishing reference facilities, the facilities designated in the FCC order creating or modifying the post-transition DTV Table of Allotments.

(d) An application will not be accepted if it is predicted to cause interference to more than an additional 0.5 percent of the population served by another post-transition DTV station. For this purpose, the population served by the station receiving additional interference does not include portions of the population within the noise-limited service contour of that station that are predicted to receive interference from the post-transition DTV allotment facilities of the applicant or portions of that population receiving masking interference from any other station.

(1) For evaluating compliance with the requirements of this paragraph, interference to populations served is to be predicted based on the 2000 census population data and otherwise according to the procedure set forth in OET Bulletin No. 69: “Longley-Rice Methodology for Evaluating TV Coverage and Interference” (February 6, 2004) (incorporated by reference, see § 73.8000), including population served within service areas determined in accordance with § 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. Applicants may request the use of a cell size other than the default of 2.0 km per side, but only requests for cell sizes of 1.0 km per side or 0.5 km per side will be considered. The threshold levels at which interference is considered to occur are:

(i) For co-channel stations, the D/U ratio is + 15 dB. This value is only valid at locations where the signal-to-noise ratio is 28 dB or greater. At the edge of the noise-limited service area, where the signal-to-noise (S/N) ratio is 16 dB, this value is + 23 dB. At locations where the S/N ratio is greater than 16 dB but less than 28 dB, D/U values 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 interference from a lower first-adjacent channel, the D/U ratio is - 28 dB.

(iii) For interference from an upper first-adjacent channel, the D/U ratio is - 26 dB.

(2) 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 this section shall not be applicable to these pairs of channels (see § 73.603(a)).

(e) A petition to add a new channel to the post-transition DTV Table or a post-transition DTV station application that proposes to expand its 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.

(1) For evaluating compliance with the requirements of this paragraph, interference to populations served is to be predicted based on the most recent official decennial U.S. Census population data as identified by the Media Bureau in a Public Notice issued not less than 60 days prior to use of the data for a specific year in application

processing, and otherwise according to the procedure set forth in OET Bulletin No. 69: "Longley-Rice Methodology for Evaluating TV Coverage and Interference" (February 6, 2004) (incorporated by reference, see § 73.8000), including population served within service areas determined in accordance with § 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. Applicants may request the use of a cell size other than the default of 2.0 km per side, but only requests for cell sizes of 1.0 km per side or 0.5 km per side will be considered. The threshold levels at which interference is considered to occur are:

(2) 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) fails to meet the D/U signal ratios specified in paragraph (e) of this section.

(3) In support of a request for waiver of the interference protection requirements of this section, an applicant for a post-transition 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/#69>.

(f) [Reserved]

(g) The interference protection requirements contained in this section apply to television station operations under both the DTV transmission standard in § 73.682(d) and the Next Gen TV transmission standard in § 73.682(f).

[73 FR 5682, Jan. 30, 2008, as amended at 83 FR 5021, Feb. 2, 2018; 83 FR 5544, Feb. 8, 2018]