(4) In addition to the requirements set forth in paragraph (c)(3) of this section, earth station licensees with a gain equivalent or higher than the gain of a 1.2 meter antenna operating in the 14.0–14.5 GHz band, authorized to operate with one or more space stations described in paragraph (c)(1) of this paragraph in frequency bands greater than 14.5 GHz shall be required to comply with the antenna input power density requirements set forth in § 25.212(c).

(d) Applicants requesting authorization of a satellite subject to paragraphs (b) or (c) of this section must submit a narrative statement describing the debris mitigation design and operational strategies, if any, that they will use. Applicants are specifically required to submit a casualty risk assessment if planned post-mission disposal involves atmospheric re-entry of the spacecraft.

(e) In the event that the Commission adopts frequency band-specific service rules for a particular frequency band after it has granted one or more space station or earth station licenses for operations in that frequency band, those licensees will be required to come into compliance with the frequency band-specific service rules within 30 days of the effective date of those rules, unless otherwise specified by either Commission or Bureau Order.

[68 FR 51508, Aug. 27, 2003]

§§ 25.218–25.219 [Reserved]

§ 25.220 Non-conforming transmit/receive earth station operations.

(a)(1) This section applies to earth station applications other than ESV applications in which:

(i) The proposed antenna does not conform to the standards of §§ 25.209(a) and

(b), and/or

(ii) The proposed power density levels are in excess of those specified in § 25.134, § 25.211, or § 25.212, or those derived by the procedure set forth in paragraph (c)(1) of this section, whichever is applicable.

(2) Paragraphs (b) through (e) and (g) of this section apply to the earth station applications described in paragraph (a)(1) of this section, in which the applicant seeks transmit/receive authority.

(3) Paragraphs (f) and (g) of this section applies to the earth station applications described in paragraph (a)(1) of this section in which the applicant seeks transmit-only or receive-only authority.

(4) The requirements for petitions to deny applications filed pursuant to this section are set forth in § 25.154.

(b) If an antenna proposed for use by the applicant does not comply with the antenna performance standards contained in § 25.209(a) and (b), the applicant must provide, as an exhibit to its FCC Form 312 application, the antenna gain patterns specified in § 25.132(b).

(c) If an antenna proposed for use by the applicant does not comply with the performance standards contained in § 25.209(a) and (b), the applicant must meet the requirements of either paragraph (c)(1) or (c)(2) of this section to obtain authority to transmit. The applicant must meet the requirements of paragraph (c)(3) of this section to obtain protection from receiving interference from adjacent satellite operators.

(1) The applicant must provide in its Form 312, Schedule B, the power and power density levels that result by reducing the values stated in §§ 25.134, 25.211, or 25.212, whichever is applicable, by the number of decibels that the non-compliant antenna fails to meet the antenna performance standard of § 25.209(a) and (b), or

(2) The applicant will not be permitted to transmit to any satellite unless the applicant has provided the certifications listed in paragraph (e)(1) of this section from the operator of that satellite(s).

(3) The applicant will not receive protection from adjacent satellite interference from any satellite unless the applicant has provided the certifications listed in paragraph (d)(1) of this section from the operator of that satellite(s) from which it plans to receive.

(d)(1) If an antenna proposed for use by the applicant does not comply with the performance standards contained in § 25.209(a) and (b), the applicant must submit the certifications listed in paragraphs (d)(1)(i) through (d)(1)(iv) of this section to qualify for protection from receiving interference from other satellite systems. The applicant will be

granted protection from receiving interference only with respect to the satellite systems included in the coordination agreements referred to in the certification required by paragraph (d)(1)(ii) of this section, and only to the extent that protection from receiving interference is afforded by those coordination agreements.

(i) A statement from the satellite operator acknowledging that the proposed operation of the subject non-conforming earth station with its satellite(s) has the potential to receive interference from adjacent satellite networks that may be unacceptable.

(ii) A statement from the satellite operator that it has coordinated the operation of the subject non-conforming earth station accessing its satellite(s), including its required downlink power density based on the information contained in the application, with all adjacent satellite networks within 6° of orbital separation from its satellite(s), and the operations will operate in conformance with existing coordination agreement for its satellite(s) with other satellite systems.

(iii) A statement from the satellite operator that it will include the subject non-conforming earth station operations in all future satellite network coordinations, and

(iv) A statement from the earth station applicant certifying that it will comply with all coordination agreements reached by the satellite operator(s).

(2) A license granted pursuant to paragraph (d)(1) of this section will include, as a condition on that license, that if a good faith agreement cannot be reached between the satellite operator and the operator of a future 2° compliant satellite, the earth station operator shall accept the power density levels that would accommodate the 2° compliant satellite.

(e)(1) An earth station applicant proposing to use transmitted satellite carrier EIRP densities, and/or maximum power into the antenna in excess of the levels in §§ 25.134, 25.211, 25.212, or the power density levels derived through the procedure set forth in paragraph (c)(1) of this section, whichever is applicable, shall provide the following certifications as an exhibit to its earth station application:

(i) A statement from the specified satellite operator acknowledging that the proposed operation of the subject non-conforming earth station with its satellite(s) has the potential to create interference to adjacent satellite networks that may be unacceptable.

(ii) A statement from the specified satellite operator that it has coordinated the operation of the subject non-conforming Earth Station accessing its satellite(s), and its corresponding downlink power density requirements (based on the information contained in the application) with all adjacent satellite networks within 6° of orbital separation from its satellite(s), and the operations will not violate any existing coordination agreement for its satellite(s) with other satellite systems.

(iii) A statement from the specified satellite operator that it will include the subject non-conforming Earth Station power and power densities in all future satellite network coordinations, and

(iv) A statement from the earth station applicant certifying that it will comply with all coordination agreements reached by the satellite operator(s).

(2) A license granted pursuant to paragraph (e)(1) of this section will include, as a condition on that license, that if a good faith agreement cannot be reached between the satellite operator and the operator of a future 2° compliant satellite, the earth station operator shall reduce its power to those levels that would accommodate the 2° compliant satellite.

(f)(1) If an earth station applicant requests transmit-only authority, and its proposed antenna does not conform to the standards of § 25.209(a) and (b), it must meet the requirements of paragraphs (b) and (c) of this section.

(2) If an earth station applicant requests transmit-only authority, and its proposed power density levels are in excess of those specified in §§ 25.134, 25.211, or 25.212, or those derived by the procedure set forth in paragraph (c)(1) of this section, it must meet the requirements of paragraph (e) of this section.

(3) If an earth station applicant requests receive-only authority, and its proposed antenna does not conform to the standards of §25.209(a) and (b), it must meet the requirements of paragraphs (b) and (d) of this section.

(g) Applicants filing applications for earth stations pursuant to this section must provide the following information for the Commission's public notice:

(1) Detailed description of the service to be provided, including frequency bands and satellites to be used. The applicant must identify either the specific satellites with which it plans to operate, or the eastern and western boundaries of the geostationary satellite orbit arc it plans to coordinate.

(2) The diameter or equivalent diameter of the antenna.

(3) Proposed power and power density levels.

(4) Identification of any rule or rules for which a waiver is requested.

[70 FR 32256, June 2, 2005]

§25.221 Blanket Licensing provisions for Earth Stations on Vessels (ESVs) receiving in the 3700–4200 MHz (space-to-Earth) frequency band and transmitting in the 5925–6425 MHz (Earth-to-space) frequency band, operating with Geostationary Satellites in the Fixed-Satellite Service.

(a) All applications for licenses for ESVs transmitting in the 5925–6425 MHz (Earth-to-space) bands to geostationary-orbit satellites in the fixed-satellite service shall provide sufficient data to demonstrate that the ESV operations meet the following criteria, which are ongoing requirements that govern all ESV licensees and operations in these bands:

(1) The off-axis EIRP spectral density for co-polarized signals, emitted from the ESV, in the plane of the geostationary satellite orbit as it appears at the particular earth station location (*i.e.*, the plane determined by the focal point of the antenna and the line tangent to the arc of the geostationary satellite orbit at the position of the target satellite), shall not exceed the following values:

$26.3 - 25\log(\theta) - 10\log(N)$ dBW/4kHz for $1.0° \le \theta \le 7.0°$

$5.3 - 10\log(N)$dBW/4kHz for $7.0° < \theta \le 9.2°$

$29.3 - 25\log(\theta) - 10\log(N)$ dBW/4kHz for $9.2° < \theta \le 48°$

$-12.7 - 10\log(N)$ dBW/4kHz for $48° < \theta \le 180°$

where θ is the angle in degrees from the axis of the main lobe. For an ESV network using frequency division multiple access (FDMA) or time division multiple access (TDMA) technique, N is equal to one. For an ESV network using code division multiple access (CDMA) technique, N is the maximum number of co-frequency simultaneously transmitting earth stations in the same satellite receiving beam.

(2) In all other directions, the off-axis EIRP spectral density for co-polarized signals emitted from the ESV shall not exceed the following values:

$29.3 - 25\log(\theta) - 10\log(N)$ dBW/4kHz for $1.0° \le \theta \le 48°$

$-12.7 - 10\log(N)$ dBW/4kHz for $48° < \theta \le 180°$

where θ and N are defined as set forth in paragraph (a)(1) of this section.

(3) For $\theta > 7°$, the values given in paragraphs (a)(1) of this Section may be exceeded by no more than 10% of the earth station antenna sidelobes, provided no individual sidelobe exceeds the criteria given by more than 3 dB.

(4) In all directions, the off-axis EIRP spectral density for cross-polarized signals emitted from the ESV shall not exceed the following values:

$16.3 - 25\log(\theta) - 10\log(N)$ dBW/4kHz for $1.8° \le \theta \le 7.0°$

$-4.7 - 10\log(N)$ dBW/4kHz for $7.0° < \theta \le 9.2°$

where θ and N are defined as set forth in paragraph (a)(1) of this section.

(5) For non-circular ESV antennas, the major axis of the antenna will be aligned with the tangent to the geostationary satellite orbital arc at the target satellite point, to the extent required to meet specified off-axis e.i.r.p. criteria.

(6) A pointing error of less than 0.2°, between the orbital location of the target satellite and the axis of the main lobe of the ESV antenna.

(7) All emissions from the ESV shall automatically cease within 100 milliseconds if the angle between the orbital location of the target satellite