

(7)(i) Each SDARS terrestrial repeater transmitter utilized for operation under this paragraph must be of a type that has been authorized by the Commission under its certification procedure.

(ii) In addition to the procedures set forth in subpart J of part 2 of this chapter, power measurements for SDARS repeater transmitters may be made in accordance with a Commission-approved average power technique. Peak-to-average power ratio (PAPR) measurements for SDARS repeater transmitters should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that the PAPR will not exceed 13 dB for more than 0.1 percent of the time or another Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

(iii) Any manufacturer of radio transmitting equipment to be used in these services may request equipment authorization following the procedures set forth in subpart J of part 2 of this chapter. Equipment authorization for an individual transmitter may be requested by an applicant for a station authorization by following the procedures set forth in part 2 of this chapter.

(8) Applications for blanket authority to operate terrestrial repeaters must be filed using Form 312, except that Schedule B to Form 312 need not be filed. Such applications must also include the following information as an attachment:

(i) The space station(s) with which the terrestrial repeaters will communicate, the frequencies and emission designators of such communications, and the frequencies and emission designators used by the repeaters to retransmit the received signals.

(ii) The maximum number of terrestrial repeaters that will be deployed under the authorization at 1) power levels equal to or less than 2-watt average EIRP, and 2) power levels greater than 2-watt average EIRP (up to 12-kW average EIRP).

(iii) A certification of compliance with the requirements of § 25.144(e)(1) through (7).

(9) SDARS terrestrial repeaters that are ineligible for blanket licensing must be authorized on a site-by-site basis. Applications for site-by-site authorization must be filed using Form 312, except that Schedule B need not be provided. Such applications must also include the following information, as an attachment:

(i) The technical information for each repeater required to be shared with potentially affected WCS licensees as part of the notification requirement set forth in § 25.263(c)(2).

(ii) The space station(s) with which the terrestrial repeaters will communicate, the frequencies and emission designators of such communications, and the frequencies and emission designators used by the repeaters to retransmit the received signals.

[62 FR 11105, Mar. 11, 1997, as amended at 68 FR 51504, Aug. 27, 2003; 70 FR 32254, June 2, 2005; 75 FR 45067, Aug. 2, 2010]

§ 25.145 Licensing conditions for the Fixed-Satellite Service in the 20/30 GHz bands.

(a) Except as provided in § 25.210(b), in general all rules contained in this part apply to Fixed-Satellite Service in the 20/30 GHz bands.

(b) *System License.* Applicants authorized to construct and launch a system of technically identical non-geostationary satellite orbit satellites will be awarded a single “blanket” license covering a specified number of space stations to operate in a specified number of orbital planes.

(c) In addition to providing the information specified in § 25.114, each non-geostationary satellite orbit applicant shall demonstrate the following:

(1) That the proposed system be capable of providing fixed-satellite services to all locations as far north as 70 deg. latitude and as far south as 55 deg. latitude for at least 75% of every 24-hour period; and

(2) That the proposed system is capable of providing fixed-satellite services on a continuous basis throughout the fifty states, Puerto Rico and the U.S. Virgin Islands, U.S.

(3) [Reserved]

(d) [Reserved]

(e) *Prohibition of certain agreements.* No license shall be granted to any applicant for a space station in the fixed-satellite service operating in the 20/30 GHz band if that applicant, or any persons or companies controlling or controlled by the applicant, shall acquire or enjoy any right, for the purpose of handling traffic to or from the United States, its territories or possession, to construct or operate space segment or earth stations, or to interchange traffic, which is denied to any other United States company by reason of any concession, contract, understanding, or working arrangement to which the licensee or any persons or companies controlling or controlled by the licensee are parties.

(f)(1) *Reporting Requirements.* All licensees in the 20/30 GHz band shall, on June 30 of each year, file a report with the International Bureau and the Commission's Columbia Operations Center, 9200 Farm House Lane, Columbia, MD 21046 containing the following information:

(i) Status of space station construction and anticipated launch date, including any major problems or delay encountered;

(ii) A listing of any non-scheduled space station outages for more than thirty minutes and the cause(s) of such outages; and

(iii) Identification of any space station(s) not available for service or otherwise not performing to specifications, the cause(s) of these difficulties, and the date any space station was taken out of service or the malfunction identified.

(iv) All operators of NGSO FSS systems in the 18.8–19.3 GHz and 28.6–29.1 GHz bands shall, within 10 days after a required implementation milestone as specified in the system authorization certify to the Commission by affidavit that the milestone has been met or notify the Commission by letter that it has not been met. At its discretion, the Commission may require the submission of additional information (supported by affidavit of a person or person with knowledge thereof) to demonstrate that the milestone has been met. Failure to file a timely certification of milestones, or filing disclosure of non-compliance, will result in

automatic cancellation of the authorization with no further action required on the Commission's part.

(2) Licensees shall submit to the Commission a yearly report indicating the number of earth stations actually brought into service under its blanket licensing authority. The annual report is due to the Commission no later than the first day of April of each year and shall indicate the deployment figures for the preceding calendar year.

(g) *Policy governing the relocation of terrestrial services from the 18.3 to 19.3 GHz band.* Frequencies in the 18.3–19.3 GHz band listed in parts 21, 74, 78, and 101 of this chapter have been reallocated for primary use by the Fixed-Satellite Service, subject to various provisions for the existing terrestrial licenses. Fixed-Satellite Service operations are not entitled to protection from the co-primary operations until after the period during which terrestrial stations remain co-primary has expired. (see §§21.901(e), 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) of this chapter).

(h) *Replacement of Space Stations within the System License Term.* Licensees of NGSO FSS systems in the 18.8–19.3 GHz and 28.6–29.1 GHz frequency bands authorized through a blanket license pursuant to paragraph (b) of this section need not file separate applications to launch and operate technically identical replacement satellites within the term of the system authorization. However, the licensee shall certify to the Commission, at least thirty days prior to launch of such replacement(s) that:

(1) The licensee intends to launch a space station into the previously-authorized orbit that is technically identical to those authorized in its system authorization and

(2) Launch of this space station will not cause the license to exceed the total number of operating space stations authorized by the Commission.

(i) *In-Orbit Spares.* Licensees need not file separate applications to operate technically identical in-orbit spares authorized as part of the blanket license pursuant to paragraph (b) of this section. However, the licensee shall certify to the Commission, within 10 days of bringing the in-orbit spare into operation, that operation of this space

station did not cause the licensee to exceed the total number of operating space stations authorized by the Commission.

[62 FR 61456, Nov. 18, 1997, as amended at 65 FR 54171, Sept. 7, 2000; 66 FR 63515, Dec. 7, 2001; 67 FR 39310, June 7, 2002; 68 FR 16966, Apr. 8, 2003; 68 FR 51505, Aug. 27, 2003; 68 FR 59129, Oct. 14, 2003; 70 FR 59277, Oct. 12, 2005]

§ 25.146 Licensing and operating authorization provisions for the non-geostationary satellite orbit fixed-satellite service (NGSO FSS) in the bands 10.7 GHz to 14.5 GHz.

(a) A comprehensive technical showing shall be submitted for the proposed non-geostationary satellite orbit fixed-satellite service (NGSO FSS) system in the bands 10.7 GHz to 14.5 GHz. The technical information shall demonstrate that the proposed NGSO FSS system would not exceed the validation equivalent power flux-density (EPFD) limits as specified in § 25.208 (g), (k), and (l) for EPFD_{down}, and EPFD_{up}. If the technical demonstration exceeds the validation EPFD limits at any test points within the U.S. for domestic service and at any points outside of the U.S. for international service or at any points in the geostationary satellite orbit, as appropriate, the application would be unacceptable for filing and will be returned to the applicant with a brief statement identifying the non-compliance technical demonstration. The technical showing consists of the following:

(1) *Single-entry validation equivalent power flux-density, in the space-to-Earth direction, (EPFD_{down}) limits.* (i) Provide a set of power flux-density (pfd) masks, on the surface of the Earth, for each space station in the NGSO FSS system. The pfd masks shall be generated in accordance with the specification stipulated in the ITU-R Recommendation BO.1503, "Functional Description to be used in Developing Software Tools for Determining Conformity of Non-GSO FSS Networks with Limits Contained in Article S22 of the Radio Regulations." In particular, the pfd mask must encompass the power flux-density radiated by the space station regardless of the satellite transmitter power resource allocation and traffic/beam switching strategy that are used at different periods of a NGSO FSS system

life. The pfd masks shall also be in an electronic form that can be accessed by the computer program contained in paragraph (a)(1)(iii) of this section.

(ii) Identify and describe in detail the assumptions and conditions used in generating the power flux-density masks.

(iii) If a computer program that has been approved by the ITU for determining compliance with the single-entry EPFD_{down} validation limits is not yet available, the applicant shall provide a computer program for the single-entry EPFD_{down} validation computation, including both the source code and the executable file. This computer program shall be developed in accordance with the specification stipulated in Recommendation ITU-R S.1503 (2000). If the applicant uses the ITU approved software, the applicant shall indicate the program name and the version used.

(iv) Identify and describe in detail the necessary input parameters for the execution of the computer program identified in paragraph (a)(1)(iii) of this section.

(v) Provide the result, the cumulative probability distribution function of EPFD, of the execution of the computer program described in paragraph (a)(1)(iii) of this section by using only the input parameters contained in paragraphs (a)(1)(i) and (a)(1)(iv) of this section.

(2) *Single-entry validation equivalent power flux-density, in the Earth-to-space direction, EPFD_{up} limits.* (i) Provide a set of NGSO FSS earth station maximum equivalent isotropically radiated power (e.i.r.p.) mask as a function of the off-axis angle generated by a NGSO FSS earth station. The maximum e.i.r.p. mask shall be generated in accordance with the specification stipulated in the ITU-R Recommendation BO.1503. In particular, the results of calculations encompass what would be radiated regardless of the earth station transmitter power resource allocation and traffic/beam switching strategy are used at different periods of a NGSO FSS system life. The e.i.r.p. masks shall also be in an electronic form that can be accessed by the computer program contained in paragraph (a)(2)(iii) of this section.