

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	IBFS File Nos. SAT-LOI-20081113-00216
)	SAT-AMD-20091026-00113
Spectrum Five LLC)	SAT-AMD-20111223-00247
)	SAT-AMD-20120308-00038
)	SAT-AMD-20120314-00043
Petition for Declaratory Ruling Regarding)	SAT-AMD-20120525-00090
17/24 GHz Broadcasting-Satellite Service to the)	SAT-AMD-20120615-00098
U.S. Market from the 119.25° W.L. Orbital)	
Location)	Call Sign: S2777

DECLARATORY RULING

Adopted: October 17, 2012

Released: October 17, 2012

By the Chief, Satellite Division, International Bureau:

I. INTRODUCTION

1. With this Order, we grant the request of Spectrum Five LLC (Spectrum Five) for a declaratory ruling regarding access to the U.S. market using a planned geostationary satellite orbit (GSO) space station in the 17/24 GHz Broadcast-Satellite Service (BSS). The proposed satellite will operate under the authority of the Netherlands at the 119.25° W.L. orbital location.¹ We conclude that Spectrum Five's provision of service to U.S. customers, using the 17.3-17.7 GHz (space-to-Earth) frequency band for BSS downlink transmissions, and the 24.75-25.25 GHz (Earth-to-space) frequency band for uplink BSS feeder links, as specified in this Order, would serve the public interest. Grant of this request will promote competition in the United States by providing consumers with an additional choice in satellite communications services.

II. BACKGROUND

2. In May 2007, the Commission released a Report and Order adopting processing and service rules for the 17/24 GHz BSS. The *17/24 GHz BSS Report and Order*, at Appendix F, specified a framework in which 17/24 GHz BSS space stations would operate at orbital locations spaced at four-

¹ This orbital location is offset 0.25 degrees from the 119° W.L. orbital location specified in Appendix F to the *17/24 GHz BSS Report and Order*, and this grant is at reduced power and without full interference protection. For a complete explanation of the rules and policies regarding the spacing framework and interference protections in the 17/24 GHz BSS band, see Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band, IB Docket No. 06-123, *Report and Order and Further Notice of Proposed Rulemaking*, IB Docket No 06-123, 22 FCC Rcd 8842 (2007) (*17/24 GHz BSS Report and Order*), *petitions for reconsideration pending*; *Order on Reconsideration*, IB Docket No. 06-123, 22 FCC Rcd 17951 (2007) (*Order on Reconsideration*) (*sua sponte*); *Second Order on Reconsideration*, IB Docket No. 06-123, 25 FCC Rcd 15718 (2010), *Second Report and Order*, IB Docket No. 06-123, 26 FCC Rcd 8927 (2011) (*Second Report and Order*).

degree intervals (hereafter referred to as Appendix F locations).² At the same time, the Commission issued a *Further Notice of Proposed Rulemaking* seeking comment on interference issues related to the 17 GHz band.³ In the 17 GHz band, both the 17/24 GHz BSS and the Direct Broadcast Satellite (DBS) service operate. For the 17/24 GHz BSS, transmission is in the space-to-Earth direction, i.e., from 17/24 GHz BSS space stations to consumer antennas. For the DBS service, transmission is in the Earth-to-space direction, i.e., from DBS feeder link earth stations to receiving antennas on DBS space stations.⁴ When the transmissions from 17/24 GHz BSS space stations are received by the antennas of nearby DBS space stations, interference to the DBS feeder link communications can result, and this interference is referred to as “space path” interference. The FNPRM sought comment on a variety of means to mitigate space path interference.⁵

3. On November 13, 2008, Spectrum Five filed a petition for declaratory ruling (PDR) regarding its proposal to serve the United States through a Netherlands-authorized satellite to be operated in the 17/24 GHz BSS from the 118.8° W.L. orbital location, a location offset 0.2 degrees from the 119° W.L. Appendix F orbital location.⁶ Spectrum Five proposed operations at reduced power and with reduced interference protection.⁷ The Spectrum Five PDR was placed on Public Notice on June 5, 2009.⁸ EchoStar Satellite Operating L.L.C. and EchoStar Corporation (collectively, “EchoStar”) filed a Joint Petition to Dismiss or Deny on July 6, 2009, arguing that Spectrum Five’s proposed operations could cause space path interference to EchoStar’s DBS operations at the 119° W.L. orbital cluster.⁹ EchoStar argued that in light of the pending proceeding to address space path interference mitigation rules, Spectrum Five should have addressed the issue in its PDR. EchoStar argued that failure to do so constituted grounds for dismissal without prejudice to refile, or alternatively a basis for denial of the market access request. Spectrum Five opposed EchoStar’s Petition to Deny, arguing that any interference concerns could be addressed through appropriate conditions on the market access grant.¹⁰

4. In June 2011, the Commission adopted rules to mitigate space path interference between 17/24 GHz BSS transmissions and the feeder link receiving antennas of DBS space stations operating in the same frequency bands.¹¹ Among other requirements, the Commission adopted an off-axis power flux

² *17/24 GHz BSS Report and Order*. The September 2007 *Order on Reconsideration* provided space station operators additional flexibility to operate full power satellites at orbital locations offset by up to one degree from an Appendix F location, if there are no licensed or prior-filed applications for 17/24 GHz BSS space stations less than four degrees away from the proposed offset space station.

³ *Further Notice of Proposed Rulemaking*, 22 FCC Rcd at 8902 ¶ 148 *et seq.*

⁴ A feeder link is a radio link from an earth station at a given location to a space station, or vice versa, conveying information for a space radiocommunication service other than for the fixed-satellite service. The given location may be at a specified fixed point, or at any fixed point within specified areas. 47 C.F.R. § 2.1 at definition of “Feeder Link.”

⁵ *Further Notice of Proposed Rulemaking*, 22 FCC Rcd at 8914-17, ¶¶ 180-188.

⁶ Spectrum Five LLC, “Petition for Declaratory Ruling to Serve the U.S. Market from the 118.8° W.L. Orbital Location in the 17/24 Broadcasting Satellite Service Band,” IBFS File No. SAT-LOI-20081113-00216, Call Sign: S2777 (Spectrum Five PDR).

⁷ *Id.* at Narrative at 2.

⁸ Policy Branch Information, Satellite Space Applications Accepted for Filing, *Public Notice*, Report No. SAT-00609 (rel. June 5, 2009).

⁹ EchoStar Satellite Operating L.L.C. and EchoStar Corporation, Joint Petition to Dismiss or Deny (filed July 6, 2009) (EchoStar Petition to Deny).

¹⁰ Spectrum Five LLC, Opposition to Joint Petition to Dismiss or Deny (filed July 16, 2009).

¹¹ *Second Report and Order*, 26 FCC Rcd 8927.

density (PFD)¹² coordination trigger for 17/24 GHz BSS space stations, required a minimum orbital separation requirement of 0.2 degrees between the assigned orbital locations of 17/24 GHz BSS space stations and DBS space stations, and placed bounds on orbital inclination and eccentricity of 17/24 GHz BSS space stations. The Commission also revised its informational requirements to require 17/24 GHz BSS space station applicants to file predicted and measured transmitting antenna off-axis gain information and adopted procedures to enable parties with pending applications or existing grants to file relevant information related to these rules.¹³

5. On December 23, 2011, Spectrum Five filed an amendment to its PDR in which it revised its requested orbital location from 118.8° W.L. to 119.25° W.L. and provided information required by the new space path interference mitigation rules.¹⁴ Spectrum Five subsequently filed additional amendments to demonstrate compliance with the space path mitigation rules.¹⁵ The amendments to Spectrum Five's PDR were accepted for filing and placed on Public Notice.¹⁶ No comments were filed during the public notice period. Subsequently, EchoStar filed a motion for leave to file untimely comments, or for acceptance of its filing as informal comments.¹⁷ Spectrum Five opposed both the motion for leave to file comments, and the comments themselves.¹⁸ EchoStar replied to Spectrum Five.¹⁹

III. DISCUSSION

A. EchoStar's Filings

6. At the time EchoStar filed its Petition to Dismiss or Deny in July 2009, Spectrum Five's pending PDR proposed operation from the 118.8° W.L. orbital location. Following adoption of the space-path interference rules, Spectrum Five amended its PDR to propose operation of its 17/24 GHz BSS space station at the 119.25° W.L. orbital location.²⁰ The revised orbital location satisfies the required minimum orbital separation of 0.2 degrees between the assigned orbital location of 17/24 GHz BSS space stations and DBS space stations.²¹ Spectrum Five's amended PDR included a demonstration of compliance with

¹² Power flux density is defined as the amount of power flow through a unit area within a unit bandwidth. The units of power flux density are those of power spectral density per unit area, namely watts per hertz per square meter. These units are generally expressed in decibel form as dB(W/Hz/m²), dB(W/m²) in a 4 kHz band, or dB(W/m²) in a 1 MHz band. 47 C.F.R. § 25.201.

¹³ *Second Report and Order*, 26 FCC Rcd at 8936 ¶ 16.

¹⁴ IBFS File. No. SAT-AMD-20111223-00247 (Spectrum Five Orbital Location Amendment). In its amendment, Spectrum Five requested a waiver of Section 25.116 of the Commission's rules to make the change in orbital location while maintaining its current place in the satellite application processing queue. Spectrum Five Orbital Location Amendment at Narrative at 4; 47 C.F.R. § 25.116. Consideration of this waiver request is unnecessary because no other 17/24 GHz BSS applications were filed that might affect Spectrum Five's place in the Commission's processing queue. Accordingly, we dismiss the waiver request as moot.

¹⁵ IBFS Files. No. SAT-AMD-20120308-00038, SAT-AMD-20120314-00043, SAT-AMD-20120525-00090, and SAT-AMD-20120615-00098.

¹⁶ Policy Branch Information, Satellite Space Applications Accepted for Filing, *Public Notice*, Report No. SAT-00878 (rel. June 29, 2012).

¹⁷ EchoStar Satellite Operating Corporation Motion for Leave to File Comments or for Acceptance as Informal Comments and Comments of EchoStar Satellite Operating Corporation (filed Aug. 10, 2012).

¹⁸ Spectrum Five LLC Opposition to Motion for Leave and Opposition to Comments (filed Aug 15, 2012).

¹⁹ Reply of EchoStar Satellite Operating Corporation (filed Aug. 29, 2012).

²⁰ The Spectrum Five Orbital Location Amendment.

²¹ The nearest DBS space station is DIRECTV 7S, which is authorized to operate at the 119.05° W.L. orbital location, 0.2 degrees from the 119.25° W.L. orbital location.

the off-axis PFD coordination trigger and the bounds on orbital inclination and eccentricity placed on 17/24 GHz BSS space stations. Nothing in the record suggests that the Spectrum Five PDR, as amended, fails to comply with any Commission rule. We therefore find that the objections raised by EchoStar in its Petition to Deny are now moot, and dismiss it for that reason.

7. While EchoStar does not challenge compliance with the Commission's rules by Spectrum Five's amended proposal, in its August 2012 filing EchoStar argues that permitting Spectrum Five to operate at the amended location will limit use of DBS assignments at the western edge of the cluster²² of potential operating locations spanning 0.2 degrees on either side of the 119° W.L. orbital location.²³ EchoStar asks the Commission to require Spectrum Five to move its proposed orbital location farther west, to the 119.35° W.L. orbital location. We decline to accept EchoStar's proposed condition. The Commission considered and rejected the same arguments in the *Second Report and Order*.²⁴

B. DISCO II Analysis

1. General Framework

8. The Commission's *DISCO II Order* implemented the market-opening commitments made by the United States in the World Trade Organization (WTO) Agreement on Basic Telecommunications Services.²⁵ In particular, the *DISCO II Order* established a framework under which the Commission will consider requests for non-U.S.-licensed space stations to serve the U.S. market. This analysis considers the effect on competition in the United States,²⁶ eligibility and operating requirements,²⁷ spectrum availability,²⁸ and national security, law enforcement, foreign policy, and trade concerns.²⁹ Thus we evaluate the Spectrum Five request under the established framework.³⁰

²² The eight U.S. Region 2 BSS and Feeder Link Plan assignments in Appendices 30 and 30A of the ITU Radio Regulations are specified at locations offset by 0.2 degrees around a central location, sometimes referred to colloquially as the "nominal" location. The assignments are collectively referred to as a "cluster." See *Second Report and Order*, 26 FCC Rcd at 8933 ¶ 8 and n.38. (Appendices 30 and 30A of the ITU Radio Regulations use the term "nominal" in a different sense, to refer to the "nominal orbital positions" specified for each plan assignment, i.e., the .2 degree offset locations. See, e.g., ITU Radio Regulations Appendix 30, Article 10.1, Col. 2. See also ITU Radio Regulations Appendix 30A, Annex 3, 4.13.1 and Figure 9.) See also Policies and Rules for the Direct Broadcast Satellite Service, *Report and Order*, IB Docket No. 98-21, 17 FCC Rcd 11331, 11386-87 ¶¶ 118-119 (2002).

²³ Comments of EchoStar Satellite Operating Corporation at 3 (filed August 20, 2012). We consider the issues raised by EchoStar in that filing as informal comments.

²⁴ *Second Report and Order*, 26 FCC Rcd at 8935 ¶ 12. DIRECTV proposed that the PFD coordination level trigger should be measured at the edge of a DBS cluster. *Id.* at 8933 ¶ 8, 8935 ¶ 12, 8942-45 ¶¶ 32-38. The Commission specifically rejected measuring either the off-axis antenna gain coordination trigger or the minimum orbital separation between 17/24 GHz BSS space stations and DBS space stations from the edge of the cluster. In doing so, the Commission was presented with the same arguments for protecting potential future DBS operations.

²⁵ Amendment of the Commission's Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic and International Satellite Service in the United States, *Report and Order*, 12 FCC Rcd 24094 (1997) (*DISCO II Order*), on reconsideration, *First Order on Reconsideration*, 15 FCC Rcd 7207 (1999).

²⁶ *DISCO II Order*, 12 FCC Rcd at 24107-56, ¶¶ 30-145.

²⁷ *Id.* at 24159-69, ¶¶ 151-74.

²⁸ *Id.* at 24157-59, ¶¶ 146-50.

²⁹ *Id.* at 24169-72, ¶¶ 175-82.

2. Competition Considerations

9. In the *DISCO II Order*, the Commission adopted two different variations of the framework under which it evaluates the foreign entrant's effect on competition in the U.S. satellite market. First, in cases where the non-U.S. satellite is licensed by a country that is a member of the WTO and will provide services covered by the U.S. commitments under the WTO Basic Telecom Agreement, the Commission established a presumption that entry will further competition in the United States. The U.S. commitments specifically exclude, however, direct-to-home (DTH) services, DBS, and Digital Audio Radio Service.³¹ For such non-covered services, and for countries not members of the WTO, the Commission conducts an Effective Competitive Opportunities (ECO-Sat) analysis for non-U.S.-licensed space stations. Under this second framework, applicants seeking to access the U.S. market via a foreign satellite must demonstrate that U.S.-licensed space stations have effective competitive opportunities to provide analogous services in the country in which the satellite is licensed and in all "route market" countries.³²

10. In this case, Spectrum Five is seeking authority to provide DTH in the 17/24 GHz BSS via a proposed foreign-licensed satellite. In addition to its desire to serve the United States, Spectrum Five indicates that it will provide service to the Netherlands Antilles.³³ The proposed satellite will operate under authority from the Netherlands, which is a WTO-Member country, but the requested DTH service is not covered by U.S. WTO commitments.³⁴ We therefore examine whether there are effective competitive opportunities for U.S.-licensed space stations to provide service analogous to Spectrum Five's proposed service in the Netherlands and Netherlands Antilles, under the "ECO-Sat" analysis.³⁵ We examine in particular *de jure* and *de facto* barriers to entry, and whether any such barriers would cause competitive distortions in the United States.³⁶

11. Spectrum Five states that there are no *de jure* and no *de facto* barriers to entry "for any entity proposing to use a U.S.-licensed satellite to deliver DTH services to the Netherlands or Netherlands

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³⁰ Foreign-licensed operators seeking U.S. market access must file the same information requested under Section 25.114 of the Commission's rules, 47 C.F.R. § 25.114, that applicants for a U.S. license in the same service must file. See *DISCO II Order*, 12 FCC Rcd at 24175 ¶ 190.

³¹ *DISCO II Order*, 12 FCC Rcd at 24104 ¶ 25.

³² 47 C.F.R. § 25.137(a). A route market is a market in which a satellite transmission originates or terminates. See *DISCO II Order*, 12 FCC Rcd at 24130 ¶ 78.

³³ Spectrum Five PDR at 18.

³⁴ Section 25.137(c) of the Commission's rules, 47 C.F.R. § 25.137(c), requires non-U.S.-licensed geostationary orbit (GSO)-like satellite systems seeking market access to demonstrate that the satellite is in orbit and operating, or that the system has a license from another administration, or that the system has been submitted for coordination to the ITU. By letter dated July 27, 2009, the Satellite Division requested that Spectrum Five provide information or documentation that its PDR meets that requirement. Letter from Robert G. Nelson, Chief, Satellite Division, Federal Communications Commission to Todd Stansbury, Counsel for Spectrum Five LLC. In response, Spectrum Five amended its PDR to provide a letter from the Netherlands Administration. Letter from M.G. Schreur, General Director – Chief Inspector, Radiocommunications Agency Netherlands and J.D. de Canha, Director Bureau Telecommunication and Post Netherlands Antilles to Robert G. Nelson, Chief, Satellite Division, Federal Communications Commission (October 16, 2009).

³⁵ See 47 C.F.R. § 25.137(a). The Commission said in *DISCO II* that when evaluating requests to provide DBS, DTH, and DARS from a non-U.S. satellite, it would apply the ECO-Sat test to the non-U.S. satellite's home market and all routes that it proposes to serve. See *DISCO II Order*, 12 FCC Rcd at 24136 ¶ 98.

³⁶ *DISCO II Order*, 12 FCC Rcd at 24137 ¶ 99.

Antilles markets.”³⁷ Spectrum Five also notes that “[s]everal foreign satellite operators already provide DTH services in the Netherlands.”³⁸ No parties commented on Spectrum Five’s ECO-Sat submission, and there is no evidence in the record that suggests the existence of market entry barriers to the Netherlands or Netherlands Antilles.³⁹

12. Accordingly, we find that Spectrum Five’s proposed entry into the U.S. market for the purpose of offering DTH services in the 17/24 GHz BSS band will not negatively effect competition for these services in the U.S. market, including Alaska and Hawaii. If Spectrum Five chooses in the future to provide service from the United States to any other nations within these satellites’ footprints, Spectrum Five must seek Commission approval pursuant to an ECO-Sat analysis for the additional route market(s).

3. Technical Qualifications: Four-Degree Spacing and Reduced Power

13. The Commission’s space station licensing policy for the 17/24 GHz BSS is predicated upon four-degree orbital spacing between geostationary space stations.⁴⁰ Applicants for authority in the 17/24 GHz BSS must submit an interference analysis demonstrating the compatibility of their proposed systems with adjacent 17/24 GHz BSS networks operating in full compliance with Commission rules.⁴¹

14. In its original PDR, Spectrum Five provided an interference analysis as required by Section 25.140(b)(4)(ii) of the Commission’s rules, that demonstrates that its proposed space station at the 118.8° W.L. orbital location would not cause more interference to adjacent 17/24 GHz BSS networks than if its space station were located at the 119° W.L. Appendix F orbital location.⁴² Elsewhere in its PDR, Spectrum Five calculated that its proposed offset operations at the 118.8° W.L. orbital location would require that its equivalent isotropically radiated power (EIRP) be reduced by 0.57 dBW to 61.1 dBW.⁴³

15. Spectrum Five has since amended its PDR to request the 119.25° W.L. orbital location, resulting in a larger offset of 0.25 degrees.⁴⁴ In its amendment, Spectrum Five did not, however, update or revise the interference analysis or its calculation of the power reduction necessary to account for this larger offset.⁴⁵ Nevertheless, on the basis of the information that was provided by Spectrum Five in its

³⁷ Spectrum Five PDR at 18.

³⁸ *Id.*

³⁹ *See also*, annual comments submitted by the Satellite Industry Association (SIA) to the U.S. Trade Representative, in which SIA identifies countries that it believes have offers that should be amended to reflect more open trade policies. *See, e.g.*, SIA Comments to the USTR on 2012 Section 1377 Report on Compliance with Telecommunications Trade Agreements (filed Dec. 19, 2011). The Netherlands is not among the countries that the SIA identifies.

⁴⁰ *17/24 GHz BSS Report and Order*, 22 FCC Rcd at 8869-8872 ¶¶ 66-74.

⁴¹ 47 C.F.R. § 25.140 (b)(3-5).

⁴² Spectrum Five PDR at Exhibit A Technical Narrative at 22-23.

⁴³ Spectrum Five presented that calculation in conjunction with its PFD demonstration, rather than with its interference analysis. Spectrum Five PDR at Exhibit A Technical Narrative at 17-18. The Bureau has explained that the calculation for offset power reduction is a component of the interference analysis, not an addition to the required demonstration that a 17/24 GHz BSS applicant can meet the fixed PFD limits set forth in Section 25.208(w) of the Commission’s Rules. DIRECTV Enterprises, LLC and Spectrum Five LLC, *Order on Reconsideration and Declaratory Ruling*, 27 FCC Rcd 5932, 5938 ¶ 16 (Int’l Bur. 2012).

⁴⁴ Spectrum Five Orbital Location Amendment, IBFS File. No. SAT-AMD-20111223-00247.

⁴⁵ Nor did Spectrum Five seek to operate at full power with full interference protection pursuant to Section 25.262(b). *See* Letter from Robert G. Nelson, Chief, Satellite Division, International Bureau, Federal

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applications, and based on our own independent calculations, we are able to determine the required power reduction and impose that reduction as a condition of the grant, as we have done in prior 17/24 GHz BSS authorizations.⁴⁶

4. Spectrum Availability

16. In the *DISCO II Order*, the Commission determined that, given the scarcity of geostationary-satellite orbit locations and spectrum resources, it would consider spectrum availability as a factor in determining whether to allow a non-U.S.-licensed space station to serve the market in the United States.⁴⁷ This is consistent with the Chairman's Note to the Basic Telecom Agreement, which states that WTO Members may exercise their domestic spectrum/frequency management policies when considering foreign entry.⁴⁸ Thus, in the *DISCO II Order*, the Commission stated that when grant of access would create interference with U.S.-licensed systems, it might impose technical constraints on the non-U.S.-licensed system's operations in the United States or, when conditions cannot remedy the interference, deny access.

17. We determined, above, that Spectrum Five's proposed operations, as conditioned, are consistent with our four-degree spacing requirements. No other entities have filed requests to serve the United States from space stations that would be technically incompatible with Spectrum Five's proposed 17/24 GHz BSS operations. As in all other grants for non-U.S.-licensed space stations to serve the United States, we require all communications between earth stations in the United States and Spectrum Five's satellite at the 119.25° W.L. orbital location to be in compliance with all space station coordination agreements reached by the Netherlands and other countries.

5. Bond

18. In the *DISCO II Order*, the Commission stated that it would apply its financial rules to non-U.S. satellites seeking to serve the U.S. market.⁴⁹ In the *Space Station Licensing Reform Order*, the Commission eliminated the financial requirements then in place and replaced them with a bond requirement.⁵⁰ The bond requirement is intended to ensure that applicants are financially able and

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Communications Commission to Todd M. Stansbury, Counsel for Spectrum Five LLC (March 9, 2012); Letter from Todd M. Stansbury, Counsel for Spectrum Five LLC, to Robert G. Nelson, Chief, Satellite Division, International Bureau, Federal Communications Commission (April 5, 2012). *See also* 47 C.F.R. § 25.114(d)(17).

⁴⁶ *See* DIRECTV Enterprises, LLC Application for Authorization to Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at the 102.825° W.L. Orbital Location, *Order and Authorization*, 24 FCC Rcd 9393, 9403-05 ¶¶ 26-31 and 9406 ¶ 34 (Int'l Bur. 2009); Intelsat North America LLC, *Order and Authorization*, 24 FCC Rcd 7058, 7062-63 ¶¶ 11 and 7067 ¶ 21 (Sat. Div. Int'l Bur. 2009). We calculated the Section 25.224 antenna gains based on the topocentric angles between Spectrum Five's requested orbital location of 119.25° W.L. and the 119° W.L. Appendix F orbital location. We also calculated the antenna gains based on the topocentric angles between the 119° W.L. Appendix F orbital location and the 123° W.L. Appendix F orbital location. Subtracting the second set of location-dependent antenna gain values from the first set, we find that the maximum potential PFD levels that could be provided from the 119.25° W.L. offset orbital location range from 0.68 dB to 0.72 dB less than those specified in Section 25.208(w), depending on the location on the surface of the Earth from which the angles between the orbital locations are measured.

⁴⁷ *DISCO II Order*, 12 FCC Rcd at 24159, ¶ 150.

⁴⁸ Chairman of the World Trade Organization Group on Basic Telecommunications, Chairman's Note, Market Access Limitations on Spectrum Availability, 36 I.L.M. at 372.

⁴⁹ *DISCO II Order*, 12 FCC Rcd at 24162, ¶ 157.

⁵⁰ Amendment of the Commission's Space Station Licensing Rules and Policies, *First Report and Order and Further* (continued...)

committed to implementing their systems in a timely manner. Under this requirement, any entity whose “queued” application is granted must execute a bond, payable to the U.S. Treasury, within 30 days of the grant. The bond is payable upon failure to meet any implementation milestone where good cause for extending that milestone is not provided.⁵¹ The amount of the bond may be reduced upon meeting each milestone.⁵² This requirement also applies to entities awarded market access for a non-U.S.-licensed satellite that is not in-orbit.⁵³ Consequently, Spectrum Five must post a \$3 million bond payable to the U.S. Treasury within 30 days of the date of this order. If Spectrum Five does not do so, this grant will automatically become null and void.

6. Other Requirements

19. Nothing in the record indicates that Spectrum Five is not legally qualified to provide service to the United States using its Netherlands-authorized space station. Furthermore, nothing in the record raises any national security, law enforcement, foreign policy, or trade concerns.⁵⁴ Consequently, we conclude that granting Spectrum Five access to the U.S. market in the 17/24 GHz BSS is consistent with all DISCO II requirements.

IV. CONCLUSION AND ORDERING CLAUSES

20. The petition for declaratory ruling filed Spectrum Five, LLC, IBFS File No. SAT-LOI-20081113-00216, as amended by File Nos. SAT-AMD-20091026-00113, SAT-AMD-20111223-00247, SAT-AMD-20120308-00038, SAT-AMD-20120314-00043, SAT-AMD-20120525-00090, and SAT-AMD-20120615-00098, regarding access to the United States market in the 17/24 GHz Broadcast-Satellite Service, using a proposed space station (Call Sign S2777), which will operate under the authority of the Netherlands at the 119.25° W.L. orbital location IS GRANTED.

21. Accordingly, IT IS ORDERED, that Spectrum Five, LLC IS GRANTED access to the U.S. market using a proposed Netherlands-authorized space station at the 119.25° W.L. orbital location using the 17.3-17.7 GHz (space-to-Earth) and the 24.75-25.25 GHz (Earth-to-space) frequency bands. Communications between U.S.-licensed earth stations and the Spectrum Five space station must be in accordance with the terms, conditions, and technical specifications set for the in Spectrum Five’s petition for declaratory rule and the Federal Communications Commission’s rules not waived herein, and are subject to the following conditions:

- a. Spectrum Five, LLC’s space station may operate up to PFD levels reduced from those specified in Section 25.208 (w) of the Commission’s rules in accordance with the following calculation methodology: For a given location on the surface of the Earth at which the required PFD reduction value needs to be determined, calculate the topocentric angular separation ‘ ϕ ’ of the 123 W.L. and 119° W.L. geostationary orbital locations, and the corresponding off-axis gain $G_{CO1}(\phi)$ of the antenna specified in Section 25.224(a)(1) of the Commission’s rules at that angular separation. For the same location on the surface of the Earth, also calculate the topocentric angular separation of the 119.25° W.L. and 123 W.L. geostationary orbital locations, and the gain

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Notice of Proposed Rulemaking, 18 FCC Rcd 10760, 10826-27 ¶¶ 170-72(2003) (*Space Station Licensing Reform Order*), and 47 C.F.R. § 25.165.

⁵¹*Space Station Licensing Reform Order* 18 FCC Rcd at 10826 ¶ 170.

⁵²*Id.* at 10826-27 ¶ 172.

⁵³*Id.* at 10875 ¶ 309. *See also* 47 C.F.R. § 25.137(d)(4).

⁵⁴*DISCO II Order*, 12 FCC Rcd at 24170-72, ¶¶ 178-182.

of the antenna $G_{CO2}(\phi)$ specified in Section 25.224(a)(1) of the Commission's rules at that angular separation. Then, perform the subtraction $G_{CO2}(\phi) - G_{CO1}(\phi)$.⁵⁵ The result is the required reduction in PFD from the value specified in Section 25.208(w). The PFD levels of Spectrum Five's space station transmissions shall not exceed the lower of these calculated levels or the levels stated in its application, and shall meet the reduced PFD limits under all atmospheric conditions.

b. Spectrum Five, LLC's space station shall be maintained within an east/west longitudinal station-keeping tolerance of ± 0.05 degrees of the assigned 119.25° W.L. orbital location.

c. Operations using Spectrum Five, LLC's space station at the 119.25° W.L. orbital location shall comply with coordination agreements reached between the Netherlands and other Administrations.

22. IT IS FURTHER ORDERED, that Spectrum Five, LLC, when designing its system, is required to take into consideration the geographic service requirements of Section 25.225 of the Commission's rules, 47 C.F.R. § 25.225.

23. IT IS FURTHER ORDERED that this grant of market access for the Spectrum Five, LLC space station at the 119.25° W.L. orbital location will be null and void with no further action on the Commission's part if the space station is not constructed, launched, and placed into operation in accordance with the milestone schedule in Section 25.164 and the bond requirement in Section 25.165 of the Commission's rules following the date of grant, as follows:

- a. Spectrum Five, LLC must file a bond with the Commission in the amount of \$3 million, pursuant to the procedures set forth in 47 C.F.R. § 25.165 within 30 days of the date of this grant (November 16, 2012).
- b. Enter into a binding contract for construction within one year (October 17, 2013);
- c. Complete the Critical Design Review within two years (October 17, 2014);
- d. Commence construction within three years (October 17, 2015);
- e. Launch and begin operations within five years (October 17, 2017).

24. IT IS FURTHER ORDERED that Spectrum Five, LLC shall file, within ten business days of completion of Critical Design Review, a revised statement detailing the post-mission disposal plans for the space station at end of life, including the quantity of fuel that will be reserved for post mission disposal maneuvers. The statement must disclose the altitude selected for a post-mission disposal orbit and demonstrate that the perigee altitude for a post-mission disposal orbit meets the requirements of Section 25.283(a) of the Commission's rules governing end-of-life disposal of geostationary satellite orbit space stations.

25. IT IS FURTHER ORDERED that this Declaratory Ruling and all conditions contained herein are subject to the outcome of the Commission's rulemaking in IB Docket No. 06-123 and any requirements subsequently adopted therein.

26. IT IS FURTHER ORDERED that this Declaratory Ruling will become effective and remain effective only to the extent that launch and space operations are authorized by the Radiocommunications Agency Netherlands under the Netherlands Space Activities Law. Spectrum Five

⁵⁵ For purposes of this calculation, the antenna diameter 'D' should be assumed to be 0.45 meters, which is the minimum-diameter antenna for which 17/24 GHz BSS licensees may claim protection from interference, according to Section 25.224(a), the wavelength ' λ ' should be assumed to be 0.017131 meters, corresponding to a frequency of 17.5 gigahertz, and the value of ' η ' can be assumed to be 0.65, as stated in Section 25.224. 47 C.F.R. § 25.224.

must file evidence in the public record of this proceeding demonstrating grant of any such authorizations within five business days of action by the Radiocommunications Agency of the Netherlands.

27. IT IS FURTHER ORDERED that on June 30 of each year, SPECTRUM FIVE Enterprises, LLC shall file a report with the International Bureau and the Commission's Columbia Operations Center in Columbia, Maryland, containing the information current as of May 31 of that year pursuant to Section 25.210(l) of the Commission's rules, 47 C.F.R. § 25.210(l).

28. IT IS FURTHER ORDERED that Spectrum Five LLC is afforded 30 days from the date of this Declaratory Ruling to decline this grant, as conditioned. Failure to respond within this period will constitute formal acceptance of the grant, as conditioned.

29. IT IS FURTHER ORDERED that the Joint Petition to Dismiss or Deny filed by EchoStar Satellite Operating L.L.C. and EchoStar Corporation on July 6, 2009 IS DISMISSED.

30. IT IS FURTHER ORDERED that the orbital location condition proposed in the Comments of EchoStar Satellite Operating Corporation filed on August 20, 2012 IS DENIED.

31. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the date of release of this Declaratory Ruling.

FEDERAL COMMUNICATIONS COMMISSION

Robert G. Nelson
Chief, Satellite Division
International Bureau