

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

_____)		
<i>Application of</i>)		
)		
DIRECTV ENTERPRISES, LLC)	File Nos.	SAT-LOA-20060908-00100
)		SAT-AMD-20080114-00014
For Authorization to Launch and)		SAT-AMD-20080321-00077
Operate DIRECTV RB-2, a Satellite)		
in the 17/24 GHz Broadcasting Satellite)	Call Sign:	S2712
Service at the 102.825° W.L. Location)		
_____)		

OPPOSITION TO PETITION FOR RECONSIDERATION

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SUMMARY

DIRECTV urges the Commission to reject the Petition for Reconsideration filed by Spectrum Five. Spectrum Five seeks to rescind an order authorizing DIRECTV to launch and operate a 17/24 GHz BSS satellite. It claims both that the Bureau erred in approving DIRECTV's methodology for calculating power-flux density ("PFD") limits in "clear sky" conditions, and that the Bureau should have dismissed or denied DIRECTV's application for exceeding those limits. Spectrum Five is wrong on both points.

On the merits, all parties (including Spectrum Five) now agree that "clear sky" conditions include *some* atmospheric effects, because otherwise there would be no difference between that term and "free space" – which plainly does not include such effects. Indeed, in adopting the rule, the Commission stated that "clear sky" included "atmospheric attenuation due to gasses and water vapor." The parties disagree, however, on how to quantify those atmospheric effects – a topic the Commission has never addressed. In the absence of Commission guidance, the Bureau could hardly have done anything other than approve DIRECTV's chosen methodology. Spectrum Five may well prefer its own methodology (the latest of many it has espoused in this proceeding and elsewhere), but it has no basis to argue that DIRECTV was required to follow it.

Even if the Bureau were to now adopt Spectrum Five's "clear sky" methodology for the first time, or any other methodology for that matter, it could not dismiss DIRECTV's application.

- DIRECTV's application was substantially complete, as it contained all required technical showings. Spectrum Five should know this, as it has both had an application dismissed as substantially incomplete when it failed to submit required technical showings, and defended a later application from charges of

substantial incompleteness on the grounds that it contained all relevant showings even if those showings were questioned on the merits.

- By elaborating on its interpretation of the “clear sky” calculation requirement, DIRECTV did not make an impermissible amendment to the Application. Again, Spectrum Five should know this, having had one of its own applications approved based on information provided long after the application itself was filed.
- In any event, the alleged excess PFD was exceedingly minor and is no basis for dismissal or denial. Even if Spectrum Five’s proposed methodology were to be accepted, DIRECTV would exceed relevant PFD limits by *at most* less than half of one dB – and likely much less. This is far less than the differential in PFD levels that would naturally occur between neighboring systems as a simple consequence of differences in downlink beam design. Spectrum Five seeks to blow this issue well out of proportion for the sole purpose of gaining an unfair advantage in the Commission’s satellite processing queue. Such regulatory gamesmanship should not be countenanced.

The Bureau’s construction of “clear sky” conditions was correct, and thus DIRECTV’s application could not have been dismissed or denied. Moreover, even if the Bureau were now to decide that a different PFD methodology should be used going forward, the appropriate course – consistent with past Commission precedent – would be to impose a condition requiring DIRECTV to make a minor technical adjustment in its operations. Accordingly, Spectrum Five’s demand that the Bureau rescind its order and dismiss or deny the Application must be rejected.

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OPPOSITION TO PETITION FOR RECONSIDERATION

DIRECTV Enterprises, LLC (“DIRECTV”) hereby opposes the Petition for Reconsideration filed by Spectrum Five LLC (“Spectrum Five”)¹ seeking the rescission of an order authorizing DIRECTV to launch and operate a 17/24 GHz BSS satellite at the nominal 103° W.L. orbital location² and the dismissal or denial of DIRECTV’s application. As demonstrated below, the Bureau correctly concluded that DIRECTV’s application was substantially complete and complied with the Commission’s rules in every respect, including its demonstration of compliance with the power flux-density (“PFD”) limits under “clear sky” conditions set forth in Section 25.208(w). Moreover, even if the Bureau were now to adopt a different methodology for calculating “clear sky” PFD, it should – consistent with past practice – do no more than condition DIRECTV’s license on compliance with whatever revised PFD methodology it adopts going forward –

¹ Petition for Reconsideration of Spectrum Five LLC (filed Aug. 27, 2009) (“S5 Petition”).

² See *DIRECTV Enterprises, LLC*, DA 09-1624 (rel. July 28, 2009) (“*Order*”).

a condition with which DIRECTV could easily comply. The Bureau should reject Spectrum Five's attempt to create a crisis out of this truly minor issue for the sole purpose of gaining an advantage in the Commission's satellite filing queue.

I. BACKGROUND

DIRECTV's Application. For over a decade, DIRECTV has led the effort to make 17/24 GHz BSS a reality. In 1997, DIRECTV was the first to file space station applications in the band,³ and it has continued its efforts through spectrum allocation and the adoption of service rules. No other party has been involved so actively and for so long in trying to harness the potential of this band to provide innovative new services to consumers across the United States.

In response to revised service rules,⁴ DIRECTV amended one of its long-pending 17/24 GHz BSS applications to propose operation of the DIRECTV RB-2 satellite at the 102.825° W.L. orbital location.⁵ In this application, DIRECTV included calculations demonstrating that its proposed system would comply with the limitations on PFD levels at the Earth's surface imposed in Section 25.208(w) of the Commission's rules, as adjusted for its proposed 0.175° offset from the 103.0° W.L. "on-grid" location established by the Commission. Those calculations involved only four inputs, including a 1.1 dB adjustment for clear sky atmospheric attenuation.⁶ After reviewing this

³ See IBFS File Nos. SAT-LOA-19970605-00049, -00050, and -00051.

⁴ 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*, 22 FCC Red. 8842 (2007) ("17/24 GHz BSS R&O").

⁵ See IBFS File No. SAT-AMD-20080114-00014 (the "DIRECTV RB-2 Application").

⁶ *Id.*, Narrative at 12.

application for nearly four months, the Bureau accepted it for filing and placed it on public notice.⁷ No party timely filed any comments or petitions in response to this public notice.

Spectrum Five’s Objections, DIRECTV’s Response, and Spectrum Five’s Revised Objections. Over four months later, in *its own* application for authority to serve the U.S. market from a 17/24 GHz BSS system licensed by the Netherlands from the same nominal orbital location,⁸ Spectrum Five criticized DIRECTV’s methodology for calculating PFD levels. Specifically, Spectrum Five asserted that, because Section 25.208(w) specifies that PFD limits are to be calculated under “clear sky” conditions, “consideration of atmospheric loss in calculating PFD limits is directly contrary to the Commission’s rules.”⁹ Since DIRECTV included not only free space path losses but also certain atmospheric effects in its PFD calculation, Spectrum Five argued that DIRECTV’s satellite could potentially exceed the PFD limit by a very small amount (0.5 dB) some fraction of the time.¹⁰ This, argued Spectrum Five, rendered the application defective and subject to dismissal.

Even though Spectrum Five had not filed in DIRECTV’s RB-2 Application proceeding, DIRECTV nonetheless submitted an *ex parte* addressing Spectrum Five’s

⁷ Public Notice, Rep. No. SAT-00535 (rel. July 2, 2008).

⁸ *See* Petition for Declaratory Ruling to Serve the U.S. Market from the 103.15 W.L. Orbital Location in the 17/24 GHz Broadcasting Satellite Service Band, FCC File No. SAT-LOI-20081119-00217 (“S5 103W Petition”).

⁹ *Id.* at 9.

¹⁰ *Id.* at 8.

contention.¹¹ DIRECTV's *ex parte* focused largely on the difference between "clear sky" and "free space" conditions. DIRECTV noted that Section 25.208 establishes PFD limits for satellite systems operating in a number of frequency bands, but only the subsection related to 17/24 GHz BSS systems calls for the use of a "clear sky" assumption, while all of the others that specify call for the use of "free space" conditions. "Free space" conditions include *no* atmospheric effects.¹² Thus, "clear sky" conditions must include *some* atmospheric effects.

But the rules do not specify what additional factors may be appropriate to include in a clear sky calculation beyond those inherent in free space conditions, and the Commission has never addressed this issue. For this purpose, DIRECTV imported values from its "clear sky" link budget calculations into its "clear sky" PFD analysis. Two of those values, for gaseous and scintillation effects, certainly should be taken into account.¹³ Looking at the issue a second time, however, DIRECTV conceded that inclusion of *additional* atmospheric effects – in this case, a figure for cloud-based attenuation – in the PFD calculation may not have been appropriate. It nonetheless demonstrated that, even adjusting its PFD calculation to remove this factor, its proposed satellite would still comply with the limitations established in Section 25.208(w).¹⁴

¹¹ See Letter from William M. Wiltshire to Marlene H. Dortch, FCC File No. SAT-AMD-20080114-00014 (Dec. 8, 2008) ("DIRECTV Dec. 8 Ex Parte").

¹² *Id.* at 1 n.5 ("Arguably, the term 'free space' could be understood to be 'defined' in Section 25.208(q)(1), which provides that a particular PFD limit is to be determined with reference to 'assumed free space conditions (that is, when no allowance is made for propagation impairments such as rain fade).' There is no similar provision related to the term 'clear sky.'").

¹³ *Id.* at 2.

¹⁴ *Id.* at 3.

Subsequently, Spectrum Five filed an *ex parte* submission in the DIRECTV RB-2 Application proceeding, again criticizing DIRECTV's consideration of any atmospheric effects in its PFD calculations.¹⁵ However, it was not until a later *ex parte* submission that Spectrum Five itself attempted to distinguish "clear sky" and "free space" conditions.¹⁶ In that filing, Spectrum Five implicitly conceded the validity of DIRECTV's argument by abandoning the absolutist position that *no* atmospheric effects could legitimately be taken into account in a "clear sky" calculation. Nonetheless, it continued to challenge the manner in which DIRECTV had accounted for atmospheric effects, arguing that in order to capture "clear sky" conditions, the PFD calculation "must include the lowest-temperature, lowest-humidity conditions which could be experienced," since those are the conditions under which atmospheric attenuation is at its lowest.¹⁷ Using the lowest values found in Miami during December 2008, Spectrum Five calculated that "the atmospheric loss would have varied between 0.21 and 0.25 dB," meaning that DIRECTV would "produce excessive interference of 0.37 dB (~ 7.5%)." ¹⁸

The Bureau's Order. The International Bureau granted the DIRECTV RB-2 Application. It concluded that DIRECTV's application was substantially complete when filed and provided a sufficient demonstration that its proposed space station would comply with the PFD limits set forth in Section 25.208(w) under "clear sky" conditions,

¹⁵ See Letter from Howard W. Waltzman to Marlene H. Dortch, File Nos. SAT-AMD-20080321-00077, *et al.*, at 5 (Dec. 19, 2008) (asserting – without citation to any authority – that "[t]he very purpose of the clear-sky requirement is to exclude variable effects, so that satellite signals would not unduly interfere with one another depending upon the weather").

¹⁶ See Letter from Howard W. Waltzman to Marlene H. Dortch, File Nos. SAT-AMD-20080321-00077, *et al.* (Jan. 12, 2009) ("S5 Jan. 12 Ex Parte").

¹⁷ *Id.* at 3 n.7.

¹⁸ *Id.* at 3 nn. 5 and 7.

and thus rejected Spectrum Five’s challenges.¹⁹ The Bureau also granted DIRECTV three other 17/24 GHz BSS authorizations, all of which were based on similar PFD showings and none of which were challenged on that basis.²⁰

II. DISCUSSION

Spectrum Five claims that DIRECTV failed to demonstrate compliance with applicable PFD limits, and that DIRECTV’s application was *so* defective as to be dismissed. As the Bureau found, both of these claims are clearly erroneous.

A. The Bureau’s Decision Was Correct on the Merits.

1. *No Party Disputes the Bureau’s Conclusion That “Clear Sky” Conditions Include Some Atmospheric Attenuation*

Although Spectrum Five initially argued that atmospheric losses could not be considered in demonstrating compliance with the “clear sky” PFD limit imposed in Section 25.208(w), all parties now agree that such losses can be considered. As the Bureau noted, the Commission has defined the term “clear sky” for purposes of the 17/24 GHz BSS rules as “the condition when the intrinsic atmospheric attenuation due to gasses and water vapor are applicable, without additional attenuation due to tropospheric precipitation, such as rain or snow.”²¹ The Bureau also correctly noted that the structure of Section 25.208 – in which virtually every subsection other than (w) mandates a PFD

¹⁹ See Order, ¶¶ 13-25.

²⁰ See IBFS File Nos. SAT-AMD-20080321-00076, -00078, and -00079.

²¹ See Order, ¶ 17 (quoting *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 Bidirectionally in the 17.3-17.8 GHz Frequency Band*, 21 FCC Rcd. 7426, ¶ 49 n.126 (2006) (“17/24 GHz BSS NPRM”)).

demonstration made under an assumption of free-space propagation (*i.e.*, without any atmospheric effects) – confirms that “PFD demonstrations for the 17/24 GHz BSS may incorporate the atmospheric attenuation that is present in clear sky conditions.”²²

2. *There Exists No Established Methodology For Determining Which Atmospheric Attenuation Should Be Included in Clear Sky PFD Calculations*

If there is a question remaining, then, it is not *whether* atmospheric losses may be incorporated into the PFD analysis, but *how* to do so. As the Bureau noted, the Commission’s rules do not specify the format or contents of a demonstration of compliance with Section 25.208(w).²³ Accordingly, there is no prescribed methodology for considering atmospheric effects in determining the maximum PFD allowable for a 17/24 GHz BSS space station. Spectrum Five may disagree with DIRECTV’s approach, but it has no legal basis to assert that such approach is contrary to Commission rules or precedent.

Certainly, there is no legal basis for Spectrum Five’s assertion that atmospheric effects *must* be determined using its approach, the most recent iteration of which yields 0.13 dB of atmospheric attenuation in South Florida.²⁴ Spectrum Five can point to no instance in which the Commission has applied the term “clear sky” in the way Spectrum Five now contends is absolutely compelled. Moreover, as DIRECTV has pointed out, Spectrum Five itself has taken different positions on whether any atmospheric effects

²² *Order*, ¶ 17.

²³ *Id.*, ¶ 11.

²⁴ *See* S5 Petition at 7 and n.9.

may be considered, and if so, how to quantify those effects.²⁵ Indeed, before making any of its filings with respect to the 103° W.L. orbital location at issue in this proceeding, Spectrum Five filed a request for authorization to provide 17/24 GHz BSS service from the nominal 119° W.L. orbital location in which its PFD showing included the assertion that “[t]he atmospheric loss in the South Florida area where this maximum occurs *is at least 0.35 dB.*”²⁶

Given its evolving views on this matter, Spectrum Five’s contention throughout this proceeding that Section 25.208(w) is “unambiguous” and “clear on its face,” so much so that Spectrum Five’s construction is “compelled by the regulation’s plain language,”²⁷ is at best ironic. But its insistence that DIRECTV’s application be dismissed for failure to agree with at least one of Spectrum Five’s proffered PFD methodologies (at least one of which even Spectrum Five now concedes to be wrong) is the worst sort of regulatory gamesmanship.

3. *The Bureau Correctly Concluded That DIRECTV’s PFD Showing Met the Requirements of Section 25.208(w)*

After confirming the proposition that atmospheric losses may be taken into consideration in making the “clear sky” PFD showing required under Section 25.208(w), the Bureau proceeded to evaluate the showing made in the DIRECTV RB-2 Application. Initially, DIRECTV included 1.1 dB of loss due to atmospheric effects in its PFD

²⁵ See Letter from William M. Wiltshire to Marlene H. Dortch, File Nos. SAT-AMD-20080114-00013 and -00014, at 2-3 (Feb. 19, 2009) (Spectrum Five varied from demanding no atmospheric losses to conceding 0.25 dB of loss).

²⁶ See IBFS File No. SAT-LOI-20080910-00178, Technical Narrative at 15 (filed Sep. 10, 2008) (emphasis added) (“S5 119W Petition”).

²⁷ See Letter from Howard W. Waltzman to Marlene H. Dortch, File Nos. SAT-AMD-20080321-00077, *et al.*, at 4 (Jan. 12, 2009).

calculation, drawn from the well-established concept of “clear sky” conditions used in link budget calculations. Consistent with the Commission’s guidance, these losses did not include any effects due to rain or other precipitation.²⁸ As the Bureau noted, in response to questions raised by Spectrum Five, DIRECTV submitted a further discussion of its PFD calculation in which it demonstrated that, even if losses due to clouds were omitted, its proposed space station would still operate below the maximum PFD level permissible under Section 25.208(w). Based on all of this information, the Bureau properly concluded that DIRECTV had “provided its PFD demonstration under clear sky conditions” and that therefore its showing was consistent with the requirements of Section 25.208(w).²⁹

After reaching this conclusion, the Bureau went on to make an additional point by calculating the maximum PFD level on the Earth’s surface that would result under “extreme clear-sky conditions” – *i.e.*, without consideration of any effects of water vapor in the air.³⁰ Revising DIRECTV’s PFD calculations to reflect such conditions – an approach even Spectrum Five does not assert is required – yields a PFD level of -115.0 dBW/m²/MHz. This would satisfy the PFD limit for 17/24 GHz BSS operations in the South Florida region for a system located at an “on grid” slot.³¹ As Spectrum Five points

²⁸ The Commission’s guidance on the meaning of “clear sky” specifically contemplated inclusion of effects due to water vapor, and only precluded consideration of “additional attenuation due to tropospheric precipitation, such as rain or snow.” *17/24 GHz BSS NPRM*, ¶ 46 n.126. While “attenuation due to . . . water vapor” could arguably include clouds, DIRECTV subsequently provided additional information showing that the PFD limits would be satisfied even if attenuation from clouds were not considered.

²⁹ *Order*, ¶¶ 17-18.

³⁰ *Id.*, ¶ 18. As the Bureau noted, the postulated “extreme” condition never exists, as there is always some water vapor in the atmosphere.

³¹ *See* 47 C.F.R. § 25.208(w)(1).

out, however, this limit must be adjusted to reflect DIRECTV's 0.175° offset from the “on grid” location at 103° W.L., which reduces the maximum allowable PFD to -115.5 dBW/m²/MHz – a level DIRECTV RB-2 would exceed under the “extreme” assumptions.³² Spectrum Five asserts that this error likely “misled the Bureau into believing that no further analysis of the PFD issue was necessary.”³³ To the contrary, this additional point came after the Bureau had already stated its conclusion and was not the basis for the Bureau's conclusion. Accordingly, any error in the Bureau's discussion of DIRECTV's ability to comply with PFD limits under hypothetical “extreme” conditions is harmless.³⁴

B. Even Were Spectrum Five Correct on the Merits, the Commission Would Have No Basis to Dismiss or Deny DIRECTV's Application

Spectrum Five has failed to demonstrate that its proposed methodology for determining “clear sky” conditions is correct, much less required. But even if Spectrum Five were correct, the proper remedy would be for the Commission to condition DIRECTV's authorization on compliance with the PFD limits that flow from Spectrum Five's methodology. Spectrum Five has identified *no* basis to dismiss DIRECTV's application. DIRECTV's application was substantially complete. It was not improperly

³² S5 Petition at 5.

³³ *Id.*

³⁴ *See, e.g., Hill & Welch and Myers Keller Communications Law Group*, 22 FCC Rcd. 5271, ¶17 (2007) (error in decision that was immaterial to Commission's conclusion deemed harmless error); *In re Amendment of Section 73.202(b)*, 12 FCC Rcd. 1280, ¶ 7 (MMB 1997) (failure to explicitly address arguments raised by petitioner deemed harmless error where they did not affect the outcome of the proceeding); *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970), *cert. denied*, 403 U.S. 923 (1971) (recognizing doctrine of harmless error in Commission proceedings).

amended. And, even if the Commission agreed with Spectrum Five, technical issues involving such minor adjustments are routinely handled through condition, not denial.

1. DIRECTV's Application Was "Substantially Complete" When Filed

Spectrum Five asserts not only that DIRECTV did not comply with applicable PFD limits, but that DIRECTV's application should have been dismissed because it was either defective or not "substantially complete" when filed.³⁵ As the Bureau correctly found, both of these assertions are erroneous.

The Commission's rules specify that an application will not be accepted for filing if it is "defective with respect to completeness of answers to questions, informational showings, internal inconsistencies, execution, or other matters of a formal character," or if it "does not substantially comply with the Commission's rules, regulations, specific requests for additional information, or other requirements."³⁶ Spectrum Five contends that DIRECTV's application was defective because it failed to comply with Section 25.114(d)(15), which requires each 17/24 GHz BSS applicant to provide a demonstration that its proposed space station will comply with the PFD limits established in Section 25.208(w).³⁷

Spectrum Five cannot contend that DIRECTV (1) did not provide a PFD analysis, (2) did not disclose that atmospheric attenuation was part of that analysis, or (3) did not conclude based on that analysis that the proposed space station would comply with applicable PFD limits. All of those facts are patently true and beyond dispute.³⁸ Instead,

³⁵ See S5 Petition at 12-15.

³⁶ 47 C.F.R. § 25.112(a).

³⁷ See S5 Petition at 13 (citing 47 C.F.R. § 25.114(d)(15)).

³⁸ See DIRECTV RB-2 Application, Narrative at 12.

Spectrum Five argues that DIRECTV's PFD showing did not meet the standards that Spectrum Five would unilaterally apply.

Even if Spectrum Five were correct about the proper PFD standard, which it is not, it is surely incorrect that DIRECTV's failure to comply with Spectrum Five's proposed standard renders the application "substantially incomplete." As the Bureau found, this argument "conflate[s] the completeness review with the substantive review of an application on the merits."³⁹ The substantial completeness requirement is designed to achieve a different set of objectives – all of which were achieved in this case. First, the requirement is intended to discourage speculation and to ensure that licensees are ready and willing to proceed with their satellite construction plans.⁴⁰ DIRECTV has been a driving force behind development the 17/24 GHz BSS service in general for over a decade, and has already posted a three million dollar performance bond for the DIRECTV RB-2 satellite authorized in this proceeding.⁴¹ Clearly, it has established its *bona fide* intent to put this spectrum to productive use.

Second, the requirement is designed to "ensure that a full and complete application is filed that appropriately allows for public comment on the merits of the application and provides the Commission staff with sufficient information to make a decision on the application's merits."⁴² The DIRECTV RB-2 Application forthrightly stated that its PFD showing included a 1.1 dB reduction based on atmospheric effects.

³⁹ *Order*, ¶ 23.

⁴⁰ *See Order*, ¶ 20 (citing *Space Station Reform Order*, ¶¶ 112, 244).

⁴¹ See Letter from William M. Wiltshire to Marlene H. Dortch, IBFS File Nos. SAT-LOA-20060908-00100, SAT-AMD-20080114-00014, and SAT-AMD-20080321-00077 (Aug. 25, 2009).

⁴² *See Order*, ¶ 23.

This was demonstrably sufficient to inform the Commission and the public of DIRECTV's methodology – as shown by the fact that it attracted public comment in the form of a challenge from Spectrum Five, albeit well after the comment period on DIRECTV's application had closed.⁴³

The Commission *has* dismissed applications where a party completely failed to provide an analysis called for under the Commission's rules⁴⁴ or provided conflicting or confusing information.⁴⁵ But this case does not fall into either of those categories. Rather, it is a case involving a dispute about the appropriate methodology to demonstrate compliance with a new technical standard. In such a case, the *most* the Bureau will do is condition grant of the application based on its resolution of the dispute.

Spectrum Five should well understand the distinction between incomplete applications and technical disputes because it has recently had applications that have fallen on both sides of the “substantial completeness” line. In proposing a “tweener” Direct Broadcast Satellite (“DBS”) system at the 114.5° W.L. orbital location, Spectrum Five's first application was dismissed as defective because it failed to include two

⁴³ Spectrum Five first raised the atmospheric loss issue on November 19, 2008 – well after the comment period for this application closed and before DIRECTV provided further information on its methodology on December 8, 2008. Because at that time Spectrum Five asserted that *no* atmospheric loss should be included in the PFD calculation, its assertion that “[t]he subtle and concealed nature of the technical flaws in the original application” effectively prevented it from addressing the issue prior to early 2009 is clearly erroneous. S5 Petition at 6 n.8.

⁴⁴ See, e.g., *EchoStar Satellite LLC*, 21 FCC Rcd. 4060, ¶ 14 (Int'l Bur. 2006) (dismissing application that “did not submit a technical analysis at all” or otherwise attempt to demonstrate that its proposed space station could comply with a Commission requirement for operations in the band).

⁴⁵ See, e.g., *EchoStar Satellite LLC*, 19 FCC Rcd. 24953, ¶¶ 11-12 (Int'l Bur. 2004) (application dismissed as defective due to inconsistent frequency requests and failure to submit information on antenna beam connectivity).

technical showings required under Section 25.114(d).⁴⁶ Spectrum Five then re-filed its application with showings that purported to meet those requirements. DIRECTV argued that the technical showings were insufficient.⁴⁷ The Bureau rejected this argument based not on Spectrum Five’s technical showing, but on its willingness to modify the technical characteristics of its system in order to achieve coordination – and conditioned the authorization upon timely completion of such coordination.⁴⁸

2. DIRECTV Did Not Improperly Amend Its Application

Spectrum Five also faults the Bureau for allowing what it characterizes as the “implicit amendment” of DIRECTV’s application, contrary to the rule that “[a]mendments to ‘defective’ space station applications, within the meaning of § 25.112 will not be considered.”⁴⁹ As discussed above, the DIRECTV RB-2 Application was not defective. Therefore, this rule is not applicable here, and Spectrum Five’s argument must be rejected.

Moreover, contrary to Spectrum Five’s mischaracterization, DIRECTV did not amend its application. DIRECTV has not proposed to change a single operational parameter on the space station described in its application – not power, antenna gain, or any other aspect that would affect the PFD experienced on the Earth’s surface. Instead,

⁴⁶ See Letter from Fern J. Jarmulnek to Todd M. Stansbury, 20 FCC Rcd. 3451, 3452 n.8 (Int’l Bur. 2005) (dismissing Spectrum Five application that “did not include any showing pursuant to Section 25.114(d)(13)(i)” and “did not include any information pursuant to Section 25.114(d)(13)(ii)”).

⁴⁷ Specifically, DIRECTV argued that the application should be dismissed as defective for failure to comply with the requirement in Section 25.114(d)(13)(i) for a technical showing sufficient to demonstrate that “the proposed system could operate satisfactorily if all assignments in the [Region 2 Plan] were implemented.” See *Spectrum Five, LLC*, 21 FCC Rcd. 14023, ¶¶ 25, 28 (Int’l Bur. 2006) (“*S5 Tweener Order*”).

⁴⁸ *Id.*, ¶¶ 29-30, 43(e).

⁴⁹ See S5 Petition at 14-15, 19-20 (citing 47 C.F.R. § 25.116(b)(5)).

DIRECTV provided additional information in support of its PFD showing in response to a question raised. Whether provided in response to a Commission request⁵⁰ or a private party's submission, such supplemental information is made part of the record for decision in myriad cases. Indeed, even if DIRECTV had said nothing about its PFD analysis, the Bureau staff could have unilaterally conducted a somewhat different analysis to resolve technical issues presented by the application – just as it did with another party's 17/24 GHz BSS application.⁵¹

Again, Spectrum Five should know this. In approving its “tweener” DBS application, the Bureau explicitly relied upon submissions filed by Spectrum Five *after* submitting its application, including a four-page technical appendix.⁵² Yet Spectrum Five apparently did not consider its own post-application submissions to be an inappropriate basis for the Bureau's analysis of the sufficiency of its technical showing or an inappropriate amendment of its original application.

Consideration of post-application materials was, if anything, more appropriate in this proceeding than it was in Spectrum Five's “tweener” proceeding. As documented by Spectrum Five, the purpose of the rule against amendments of defective applications is to prevent applicants from filing hastily prepared and incomplete applications to secure “first-in-line” status for processing.⁵³ Here, DIRECTV's application had already been pending for years before it was required to file its PFD analysis, and its priority in the

⁵⁰ See 47 C.F.R. § 25.111(a) (Commission may request additional information related to any application).

⁵¹ See *Intelsat North America LLC*, 24 FCC Rcd. 7058 (Int'l Bur. 2009) (adjusting angular separation used to determine allowable PFD levels in the absence of applicant input on the issue) (“*Intelsat Authorization*”).

⁵² *S5 Tweener Order*, ¶ 29 nn. 99 and 100 (citing Consolidated Reply and an ex parte letter).

⁵³ See S5 Petition at 20 (citing *EchoStar Satellite LLC*, 19 FCC Rcd. 24953, 24958 (Int'l Bur. 2004)).

queue was already secured by Commission order.⁵⁴ There was no hasty submission to secure a regulatory advantage. Rather, as discussed below, it is Spectrum Five that is seeking desperately to manufacture an issue in order to gain “first-in-line” status for its application.

3. Spectrum Five Alleges Only Exceedingly Minor Excess PFD

As even Spectrum Five concedes, the difference in the PFD level authorized in the *Order* and the PFD level Spectrum Five believes appropriate is at most 0.44 dB (or 10.7%).⁵⁵ Indeed, using the atmospheric loss of “at least 0.35 dB” that Spectrum Five asserted in its own 17/24 GHz BSS application, this figure would be cut to no more than 0.22 dB (or 5.2%). And even assuming that Spectrum Five were correct, such excess would occur only over a very limited area where the downlink beam has its peak power, and only on those rare occasions when heat and humidity were at their lowest levels. Where such small differences in a technical showing are involved – and especially where the Commission has not established a methodology – dismissal or denial would be inappropriate.

The recent grant of another 17/24 GHz BSS application demonstrates this principle.⁵⁶ Intelsat North America LLC (“Intelsat”) filed an application that included an interference analysis required under the Commission’s rules. Intelsat’s analysis relied upon the geocentric angular separation between orbital locations to determine the PFD reduction required to accommodate its off-grid orbital location. The Bureau found that,

⁵⁴ See *17/24 GHz BSS R&O*, ¶¶ 140-47 (establishing priority of four initial applicants in processing queue).

⁵⁵ See S5 Petition at 7 and n.9.

⁵⁶ See *Intelsat Authorization*, *supra* note 51.

because receiving antennas will be located on the Earth's surface rather than its core, topocentric angular separations should be used in making the PFD reduction calculations. Use of the geocentric angular separation would systematically result in a smaller PFD reduction, and therefore a correspondingly higher PFD allowance.⁵⁷ Although Intelsat did not submit any revised calculations, the Bureau staff had sufficient information to perform its own PFD analysis using topocentric angles. Accordingly, the Bureau conditioned Intelsat's license on a reduction in PFD corresponding to the result of the methodology developed by the Commission.⁵⁸

As the Bureau pointed out in the *Order*, the change in PFD methodology imposed on Intelsat "did not undermine the prior determination that Intelsat's application was substantially complete when filed nor did it require dismissal or denial of the application."⁵⁹ Rather, because Intelsat's application had provided a PFD showing as required under Section 25.140(b), the staff was able to evaluate that showing and modify it as necessary to implement what the Bureau determined to be a more appropriate methodology. Similarly, in this case, DIRECTV provided a PFD showing as required under Section 25.114(d)(15), and both the staff and Spectrum Five have had ample opportunity to evaluate that showing. Even if the Bureau were to conclude at this point that some other methodology is more appropriate, there would be no reason to dismiss or

⁵⁷ *Id.*, ¶ 10 ("For the analysis required under Section 25.224, a calculation using topocentric angular separation will always result in a larger angle, and therefore a greater PFD reduction, than the same calculation using a geocentric angular separation").

⁵⁸ *Id.*, ¶ 11. Although DIRECTV correctly used the topocentric angular separations in its PFD analysis, the Bureau nonetheless included a similar condition in its authorization. *See Order*, ¶ 31 n.76.

⁵⁹ *Order*, ¶ 24.

deny DIRECTV's application rather than conditioning the authorization to make the necessary adjustment.⁶⁰

Spectrum Five attempts to distinguish the Intelsat precedent by characterizing the angular separation issue as a “minor technical concern[,]” as compared to the “fundamental methodological defects and substantive omissions plaguing DIRECTV's application.”⁶¹ Spectrum Five fails to explain why the use of geocentric angular separation – which would systematically allow a 17/24 GHz BSS system to operate at a higher PFD level than it could under an analysis using topocentric values – should be deemed minor while inclusion of atmospheric losses – which all parties now agree can be considered – are a fundamental defect if not implemented in a manner Spectrum Five would endorse.

This is but a continuation of Spectrum Five's concerted effort to mischaracterize a disagreement of no more than 0.44 dB as something far more significant and sinister. For example, Spectrum Five asserts that DIRECTV's PFD calculations were part of a “pervasive and intentional pattern and practice” because the same methodology was used in five applications filed on the same day.⁶² Yet Spectrum Five draws no similar conclusion from the fact that Intelsat used the same geocentric angular separation

⁶⁰ The DIRECTV RB-2 Application states on its face that the satellite would be capable of lowering its power by at least 20 dB in 1.0 increments (in fixed mode) and by at least 15 dB in 0.5 dB increments in ALC mode. *See* RB-2 Application, Narrative at 7. To the extent the Bureau concluded that the satellite would exceed the applicable PFD limit under certain conditions, it could impose a condition requiring DIRECTV to operate at a lower power level. Given that the PFD exceedance alleged by Spectrum Five is less than 0.5 dB, DIRECTV clearly could comply with such a condition.

⁶¹ S5 Petition at 19.

⁶² *See* S5 Petition at ii, 3.

methodology in all four of its 17/24 GHz BSS applications.⁶³ As Spectrum Five notes, had DIRECTV really been trying to use atmospheric attenuation to maximize allowable PFD, it could have chosen a higher availability.⁶⁴ In fact, DIRECTV used a *lower* target availability (99.7%) than is its standard for other BSS applications.⁶⁵

Spectrum Five also asserts that “DIRECTV’s excessively powered satellite will create harmful interference” to other 17/24 GHz BSS systems at adjacent slots and affords DIRECTV “grossly unfair competitive advantages.”⁶⁶ Yet even assuming, *arguendo*, that DIRECTV RB-2 has been authorized to operate at a maximum PFD level 0.44 dB higher than it should, that disparity is far less than PFD differences that will occur between adjacent systems simply as a result of different operators’ beam designs. For example, Spectrum Five has applied for a 17/24 GHz BSS system at 118.4° W.L. orbital location, and Pegasus Development DBS Corporation (“Pegasus”) has been granted a license to operate such a system at the adjacent 115.0° W.L. location.⁶⁷ Neither operator included atmospheric losses in its showing of compliance with the PFD limits in Section 25.208(w).⁶⁸ Figure 1 below shows the PFD contours of the CONUS beams

⁶³ See IBFS File Nos. SAT-AMD-20080114-00008, -00011, and -00012.

⁶⁴ See S5 Petition at 11.

⁶⁵ See, e.g., *S5 Tweener Order*, ¶ 29 (noting that DIRECTV’s DBS systems target “at least 99.9% availability”).

⁶⁶ S5 Petition at iii, 4.

⁶⁷ See IBFS File Nos. SAT-LOI-20081113-00216 (“Spectrum Five 118.4W App”); SAT-AMD-20080114-00023 (“Pegasus 115 App”).

⁶⁸ See Spectrum Five 118.4W App, Technical Narrative at 17-18; Pegasus 115 App, Narrative at 9.

proposed by Pegasus (on the left) and Spectrum Five.⁶⁹ As can be seen in the comparison, the PFD of Spectrum Five’s beam decreases to -119.6 dBW/m²/MHz along approximately the same contour where Pegasus’s PFD decreases to just -117.3 dBW/m²/MHz. Accordingly, for much of the eastern half of the country (including all of

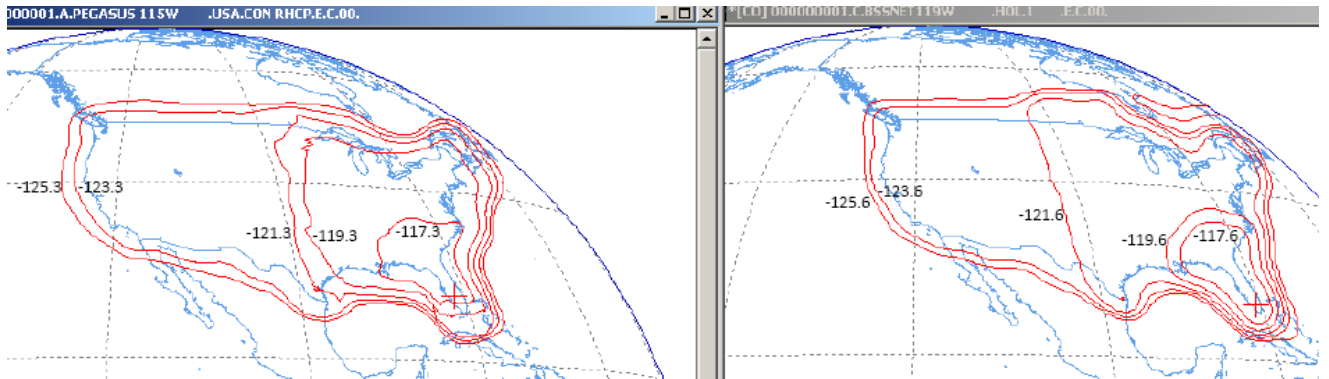


Figure 1. PFD Contour Plots for Pegasus and Spectrum Five CONUS Beams

the Northeast and Midwest), Pegasus will enjoy a nearly 2 dB PFD advantage (*i.e.*, a 58.5% power advantage) over Spectrum Five. Conversely, because Spectrum Five also

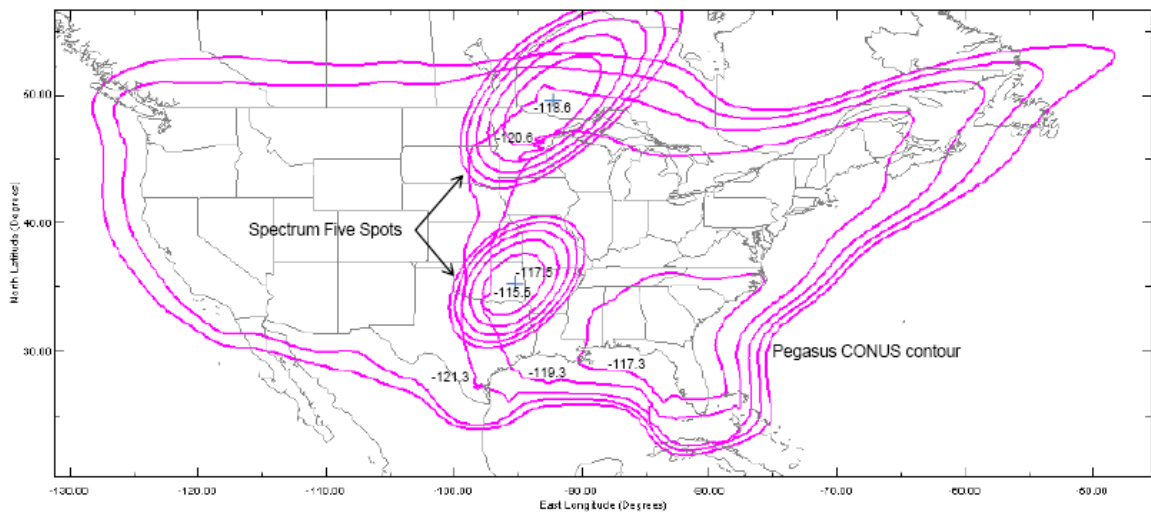


Figure 2. Comparison of Spectrum Five Spot Beam and Pegasus CONUS Beam

⁶⁹ Figures 1 and 2 were generated using the antenna beam gain contour information submitted in GXT format by Pegasus and Spectrum Five with their applications. All contours other than -2, -4, -6, -8, -10 have been removed and the PFD values inserted to simplify the comparison.

proposes to use high-power spot beams, it would enjoy a nearly 3 dB PFD advantage (*i.e.*, a 100% power advantage) over Pegasus’s CONUS beam in certain areas as illustrated by the sample beams shown in Figure 2. These disparities, which are far greater than the (at most) 0.44 dB (*i.e.*, 10.7%) at issue in this proceeding, result solely from the choices made by the applicants in designing their systems – yet both operators are apparently prepared to proceed on that basis.⁷⁰ If 2 dB or 3 dB of power differential is not sufficient to give one operator a “grossly unfair competitive advantage” or to “create harmful interference” to an adjacent system, then Spectrum Five’s assertion that 0.44 dB is sufficient to do so is patently frivolous.

Lastly, as Spectrum Five notes, DIRECTV recently filed another 17/24 GHz BSS application that included a demonstration of compliance with the PFD limits in Section 25.208(w) with no atmospheric losses taken into account.⁷¹ This is not a concession by DIRECTV that such losses should not be considered in the PFD analysis, as speculated by Spectrum Five. Simply put, DIRECTV concluded that it would be preferable to forego any insignificant increase in PFD that would result by including atmospheric losses rather than invite the inevitable further opposition from Spectrum Five. Since the satellite at issue in that proceeding is scheduled to be launched by the end of this year, DIRECTV chose to avoid the issue and the attendant delay and expense arising from further filings by Spectrum Five. The change in approach reflects a preference for expedited processing, not any implicit concession about the PFD methodology used in prior applications.

⁷⁰ Pegasus has filed a \$3 million performance bond for its authorization at 115° W.L. *See* Letter from Tony Lin to Marlene H. Dortch, IBFS File No. SAT-LOA-20060412-00044 (Jan. 16, 2009).

⁷¹ *See* S5 Petition at 10 (citing IBFS File No. SAT-LOA-20090807-00085).

