#### BEFORE THE FEDERAL COMMUNICATIONS COMMISSION WASHINGTON, D.C. 20554

In the Matter of	)		
	)	File Nos.	SAT-LOA-20060908-00100
DIRECTV Enterprises, LLC	)		SAT-AMD-20080114-00014
Application for Authorization to	)		SAT-AMD-20080321-00077
Launch and Operate DIRECTV	)		
RB-2, a Satellite in the 17/24 GHz	)		
Broadcasting Satellite Service	)		
at the 102.825° W.L. Orbital	)	Call Sign	S2712
location	)	Z.	
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### PETITION FOR RECONSIDERATION of SPECTRUM FIVE LLC

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#### **SUMMARY**

Spectrum Five LLC ("Spectrum Five") seeks reconsideration of the Order and Authorization ("Order") released by the International Bureau ("Bureau") on July 28, 2009, granting DIRECTV Enterprises, LLC ("DIRECTV") authority to construct, launch, and operate an offset 17/24 GHz Broadcasting-Satellite Service ("BSS") space station at the 102.825° W.L. orbital location. The Bureau's Order is fundamentally flawed, and the authorization granted to DIRECTV must be rescinded. DIRECTV's application should have been dismissed, or, alternatively, denied. The following considerations compel these conclusions.

- 1. DIRECTV'S proposed satellite exceeds the Commission's power limits. The Bureau mistakenly concluded that the satellite was not over-powered by applying the higher power flux density ("PFD") limit for on-grid satellites, not the proposed offset location's lower PFD limit.
- 2. DIRECTV did not reveal that it utilized a fatally flawed methodology to assert compliance with the Commission's (PFD) limits as set forth in Section 25.208(w) until nearly a year after filing its amended application, and only after questions were raised by other parties. DIRECTV included an adjustment for clouds in its methodology, despite the requirement that DIRECTV demonstrate compliance under clear sky conditions. DIRECTV then sought to modify its methodology to remove clouds through an *ex parte* filing almost a year after the window for amending its application closed. DIRECTV inappropriately substituted link budget values to determine its PFD level, resulting in a gross understatement of the PFD levels of the proposed satellite.
- 3. These methodological flaws reflect DIRECTV's pervasive and intentional pattern and practice, and are fundamental and substantial, not one-time technical or minor errors. The Bureau ignored these problems, under the mistaken assumption that its own calculation

established that DIRECTV's satellite would meet Commission PFD limits even under "extreme clear-sky conditions."

- 4. DIRECTV's excessively powered satellite will create harmful interference with other satellites, afford DIRECTV grossly unfair competitive advantages, and is incompatible with basic principles of fair and even-handed administrative action.
- 5. By approving the use of link budget calculations, the authorization invites future applicants to unilaterally set excessive power limits for their proposed satellites merely by using higher availabilities in their own link budget calculations, eviscerating the Commission's efforts to set uniform power limits which apply to all BSS satellites..
- 6. DIRECTV's application should have been dismissed or denied because the application was defective and not substantially complete. DIRECTV failed to demonstrate that its proposed space station would comply with applicable PFD limits under all conditions.
- 7. The failure to dismiss or deny the application clearly violated the Commission's regulations and was arbitrary and capricious. Moreover, under the Commission's regulations, DIRECTV should not have been permitted to, in effect, amend its application by means of an *ex parte* filing in December 2008. None of the reasons offered by the Bureau for not dismissing or denying the application, or for allowing DIRECTV to implicitly amend the application, survive scrutiny. Further, the failure of the Bureau to address DIRECTV's PFD methodology using link budget calculations, which was central to the all-important determination of the proposed satellite PFD levels, was itself arbitrary and capricious.

### BEFORE THE FEDERAL COMMUNICATIONS COMMISSION WASHINGTON, D.C. 20554

In the Matter of	)		
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	)	File Nos.	SAT-LOA-20060908-00100 SAT-AMD-20080114-00014 SAT-AMD-20080321-00077
	) ) ) _)	Call Sign	S2712

## PETITION FOR RECONSIDERATION of SPECTRUM FIVE LLC

### INTRODUCTION AND BACKGROUND

Spectrum Five LLC ("Spectrum Five") seeks reconsideration of the Order and Authorization ("Order") released by the International Bureau ("Bureau") on July 28, 2009, granting DIRECTV Enterprises, LLC ("DIRECTV") authority to construct, launch, and operate a 17/24 GHz Broadcasting-Satellite Service ("BSS") space station at the 102.825° W.L. orbital location. The Bureau authorized DIRECTV to operate in the 17.3-17.7 GHz (space-to-Earth) and the 24.75-25.15 GHz (Earth-to-space) frequency bands as specified in the Order. The Bureau also found that DIRECTV's application was substantially complete, and was appropriately accepted for filing and placed on public notice.

Spectrum Five participated in the proceedings giving rise to the Order, having filed a Petition for Declaratory Ruling on November 19, 2008, made *ex parte* presentations in

<sup>&</sup>lt;sup>1</sup> Order and Authorization *In re DIRECTV Enters., LLC, Application for Authorization to Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at the 102.85° W.L. Orbital location, File Nos.* SAT-LOA-20060908-00100, SAT-AMD-20080114-00014, SAT-AMD-20080321-00077, Call Sign S2712 (rel. July 28, 2009).

November and December 2008 and January 2009, and submitted a number of *ex parte* letters.<sup>2</sup> In reaching the conclusions set forth in the Order, the Bureau purported to consider, and reject, Spectrum Five's arguments that DIRECTV's application was not "substantially complete" and that DIRECTV's application contemplated a maximum power flux density ("PFD") level in excess of the PFD limits in the Commission's rules.<sup>3</sup>

The Bureau's decision and findings were erroneous as well as arbitrary and capricious. The Bureau wrongly concluded that "DIRECTV provided a demonstration, consistent with Section 25.114(d)(5), that its proposed space station complies with the PFD limits set forth in Section 25.208(w)," and approved an application that was based on a profoundly flawed methodology for demonstrating compliance with the Commission's PFD limits. In fact, DIRECTV relied on a patently inapplicable link budget analysis—an analysis that significantly understates power levels for substantial periods of the time—in order to justify its operation of a grossly over-powered 17/24 GHz satellite that violates Section 25.208(w), unduly harms DIRECTV's competitors in general and neighboring satellites in particular, and undermines the Commission's regulation of power limits for BSS satellites.

In its analysis used to approve the application, the Bureau applied the incorrect PFD limits for an "off-grid" satellite. The Bureau, therefore, failed to adequately analyze DIRECTV's purported demonstration of compliance with the Commission's power limits for

<sup>&</sup>lt;sup>2</sup> See Order paras. 5-6 & n.13

<sup>&</sup>lt;sup>3</sup> *Id.* paras. 9, 15-25. The Bureau accepted Spectrum Five's ex parte letter of January 12, 2009 as an informal objection to DIRECTV's application and permitted DIRECTV to file a response to it. *See id.* para.6. The Bureau also stated its intention in the Order to address the issues raised by Spectrum Five in its *ex parte* filings. *See id.* para. 9. As noted below, however, the Bureau does not appear to have directly addressed Spectrum Five's link budget arguments. Spectrum Five requests that the Bureau address those issues and determine that DIRECTV's reliance on link budget calculations leads to errors requiring the dismissal or denial of its application.

<sup>&</sup>lt;sup>4</sup> *Id.* para. 13.

off-grid space stations and, in particular, failed to properly address DIRECTV's use of link budget calculations to determine maximum PFD limits. This is not a case of simple mathematical error – the Bureau permitted DIRECTV to use a flawed methodology that leads to incorrect conclusions about the maximum PFD by including clouds in a clear sky analysis as well as by subtracting loss values which apply less than 1% of the time.

As a result of these failures, the Bureau has licensed DIRECTV to operate a non-compliant satellite that will impose harmful interference on other satellites, thereby giving DIRECTV profoundly unfair commercial and operational advantages over competitors, as well as harming the public interest that the Commission has sought to protect through its carefully constructed regulatory framework in Section 25.208(w). The Bureau also has established a precedent for the use of flawed PFD demonstrations that eviscerates the power-limit regime established by the Commission.

Furthermore, the Bureau contravened the Commission's clear procedural requirements that defective applications be dismissed or that, alternatively, an application that does not comply with the Commission's rules must be denied. Thus, as we explain more fully below, the Order should be rescinded, DIRECTV's application should have been dismissed or, alternatively, denied, and the petition of Spectrum Five to provide service from the 103.15° W.L. orbital location, which is next in line, should be considered expeditiously.

#### <u>ARGUMENT</u>

## I. THE BUREAU INAPPROPRIATELY APPROVED DIRECTV'S PROFOUNDLY FLAWED APPLICATION, THEREBY LICENSING DIRECTV TO OPERATE A SUBSTANTIALLY OVER-POWERED SPACE STATION

DIRECTV's assertion of compliance with the Commission's PFD limits, was based on the use of (1) clouds, despite the fact that Section 25.208(w) requires a demonstration of compliance with the Commission's PFD limits "for all conditions, including clear sky" and (2)

extreme link budget atmospheric loss values in the PFD calculations. DIRECTV's demonstration was thus technically flawed, and contained numerous errors that were irreparable. The Bureau's acceptance of DIRECTV's flawed methodology will have profoundly troubling consequences:

- DIRECTV's satellite will be approximately eleven percent over the PFD limits for a satellite at 102.825° W.L. based on any justifiable atmospheric loss that might be demonstrated.
- DIRECTV's excessively powered off-grid space station will pose a profound risk of harmful interference with neighboring space stations.
- DIRECTV's carte blanche to operate an over-powered space station will afford it unfair competitive advantages in the marketplace.
- Other applicants will adopt DIRECTV's flawed methodology, resulting in the launch and operation of other excessively powered space stations, which, in turn, will undermine the Commission's carefully wrought regulatory regime, which established power limits to eliminate coordination for U.S.-authorized BSS space stations in order to expedite the use of the new 17/24 GHz band.

A likely explanation for the Bureau's failure to fully analyze and reject DIRECTV's application appears in Paragraph 18 of the Order. There, the Bureau purported to respond to Spectrum Five's repeated criticisms of DIRECTV's reliance on link budget calculations to demonstrate compliance with the Commission's PFD limits.

The Bureau performed its own recalculation, ostensibly to show that, without the use of link budget calculations, and "for the sake of an analysis approximating extreme clear-sky

conditions," the DIRECTV off-grid satellite would still comply with Commission PFD limits.<sup>5</sup> Based on this recalculation, the Bureau concluded that, with a reduced attenuation factor (from 0.74 dB to 0.07 dB), "the result would be a PFD level of -115.0 dBW/m²/MHz," which, according to the Bureau, "meets the PFD limit in the Commission's rules."

The Bureau was fundamentally mistaken in its conclusion. A PFD level of -115.0 dBW/m²/MHz does not "meet the PFD limit in the Commission's rules" for a space station that is to be located at the 102.825° W.L. orbital location (which is offset 0.175 degrees from the 103° W.L. orbital location). Rather, Commission rules require that the maximum PFD created by this space station on the Earth's surface not exceed -115.5 dBW/m²/MHz (the maximum PFD limit for RB-2).7 A fundamental premise of the Bureau's calculation in paragraph 18 of the Order, however, was that a PFD level of -115.0 dbW/m²/MHz Bureau would pass muster. If DIRECTV were seeking to place its satellite exactly at the 103° W.L. orbital location, that premise would be correct. But that is not what DIRECTV is seeking to do. Thus, the calculation in paragraph 18 merely demonstrates that DIRECTV's space station would be excessively powered under a calculation relying on "extreme clear skies" conditions. It is likely that the Bureau's mistaken belief that the calculation did demonstrate compliance with the PFD limits misled the Bureau into believing that no further analysis of the PFD issue was necessary. Had the Bureau engaged in an adequate analysis of DIRECTV's methodology and addressed Spectrum Five's link budget arguments, the Bureau would have found that DIRECTV's proposed power level was substantially and materially above permissible limits, and would have

<sup>&</sup>lt;sup>5</sup> See Order para. 18 & n.52.

<sup>&</sup>lt;sup>6</sup> *Id*.

<sup>&</sup>lt;sup>7</sup> See 47 C.F.R. §§ 25.140(b)(4)(iii), 25.208(w).

discovered the methodological defect in the procedure used by DIRECTV to determine maximum PFD limits.

DIRECTV's PFD analysis was not accompanied by any technical showing to demonstrate that the modifications incorporated into the PFD values (which were based on atmospheric loss terms in the link budgets) applied under "all conditions" (as required by Section 25.208(w)). Moreover, DIRECTV was provided an opportunity to respond to Spectrum Five's criticisms of DIRECTV's link budget calculations, but utterly failed to address the issues. And in its December 2008 *ex parte*, DIRECTV merely referred to International Telecommunications Union ("ITU") standards which were used in its *link budget calculations* to determine the appropriate atmospheric loss parameters. DIRECTV failed to disclose, however, that these ITU procedures are not applicable to determine loss parameters at all times under all conditions, as required for the PFD limit demonstration.

DIRECTV's determination, based on link budgets, establishes the value of the loss terms only for a very small percentage of the time (~0.3% in this case). DIRECTV's calculations do not establish the minimum value for these parameters "for all conditions, including clear sky." DIRECTV also failed to acknowledge that the use of these figures, which were intended to estimate worst-case impairments to space-earth propagation links, was never intended to be used in the determination of maximum PFD values.

<sup>&</sup>lt;sup>8</sup> See Dec. 8, 2008 letter from William M. Wiltshire, Counsel for DIRECTV Enterprises, LLC to Marlene H. Dortch, Secretary, FCC ("DIRECTV Dec. 8 Ex Parte") 2 & n.10 (citing ITU-R P.618-9). Indeed, it was only in DIRECTV's December 2008 ex parte that DIRECTV explained the exact composition of its atmospheric attenuation adjustment for its proposed satellite at 102.825° W.L. and, for the first time, revealed its reliance on link budget calculations in its PFD demonstration. The subtle and concealed nature of the technical flaws in the original application, and the lack of openness on DIRECTV's part in providing the details of its methodology made an adequate response to its application more difficult and, effectively, prevented Spectrum Five from addressing the flawed link budget calculations prior to early 2009.

For example, it is well known that the scintillation loss parameter (one of the atmospheric loss terms used by DIRECTV, which accounts for 0.3dB of the PFD reduction in DIRECTV's analysis) depends strongly on DIRECTV's assumed availability parameter for its link margin calculations. Since DIRECTV calculated its link margins based on an availability of 99.7%, its use of the same parameters in reducing the calculated PFD limits means that these limits are only valid 0.3% of the time (the outage parameter p(%) = 100% – availability(%)). For the other 99.7% of the time, DIRECTV's demonstration provides no demonstration at all that the space station power levels will be within the Commission limits. Indeed, it is indisputable that, just based on a proper analysis of the scintillation term (which becomes negligible for p>50%), the PFD level of DIRECTV's satellite will exceed the Commission's limits more than 50% of the time. When the other atmospheric loss terms are examined in more detail, it is clear that they too will reach values well below the link budget values (for example, the gaseous loss term will drop to 0.13 dB on a cool day whereas the link budget carries this term at 0.44dB). The reduction cited in either of these parameters will cause the PFD level to materially exceed the Commission's limits.

In the Order (at paragraph 17), the Bureau concluded that, in demonstrating compliance with PFD limits, applicants may include appropriate considerations of atmospheric loss—that is, that the demonstration could incorporate "clear-sky" as opposed to "free-space" conditions. DIRECTV, however, failed to provide <u>any</u> justification for the excessive attenuation conditions that it used. Link budget calculations cannot be used to demonstrate compliance with Section

<sup>&</sup>lt;sup>9</sup> Spectrum Five used the same ITU-R P.618-9 procedures as DIRECTV to calculate that the actual value can be 0.13 dB, which would result in a PFD level of -115.06 dBW/m²/MHz and produce excessive interference of 0.44 dB (11%). *Cf.* Int'l Telecomm. Union, Recommendation ITU-R P.618-9, Propagation Data and Prediction Methods Required for the Design of Earth-Space Telecommunications Systems (2007) ("ITU-R P.618-9").

25.208(w) because such calculations cannot demonstrate compliance "for all conditions, including clear sky." Thus, it is clear that DIRECTV's proposed space station would be excessively powered—indeed, substantially so—and the Bureau should have dismissed the application, or, alternatively, denied it.

### II. THE DEFECTS IN DIRECTV'S APPLICATION ARE SUBSTANTIAL AND STRUCTURAL, NOT MERELY MINOR, "TECHNICAL" ERRORS

Paragraphs 22 and 24 of the Order imply that the defects of DIRECTV's application are minor, technical errors. The flaws in DIRECTV's application, however, cannot be so easily dismissed. DIRECTV's application suffers from major structural defects that result in a significant understatement of the power levels of its satellite.

Link budgets calculate the atmospheric loss to assure that, even in the face of high losses, the signal will remain available. To comply with the Commission's maximum PFD limits, however, DIRECTV should have determined the *minimum* possible atmospheric loss that can occur to assure that even when losses are slight, the signal at the earth's surface will not be too strong. Thus, DIRECTV's link budget calculations did not—because they could not—demonstrate compliance with the PFD limits "for all conditions," as the Commission's rules required.

In its link budget calculations, DIRECTV used the *same values* for the atmospheric loss terms under conditions of both "Clear Sky" and "Rain." As noted by the Bureau Order, there are a range of atmospheric conditions involving variable humidity and temperature levels which

<sup>&</sup>lt;sup>10</sup> See Application of DIRECTV Enters., LLC to Amend its Application for Authorization to Launch and Operate DIRECTV RB-2, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 103 ° W.L., FCC File No. SAT-AMD-20080114-00014 (Jan. 14, 2008) ("DIRECTV 103° W.L. Amendment") Ex. B, app. A, at A-1.

apply to "clear sky" conditions. As described in the ITU documents referenced by DIRECTV, 12 both gaseous and scintillation losses are highly dependent on humidity and temperature. DIRECTV calculated these terms based upon high humidity and high temperature conditions (such as those in late summer in Miami, where the link budget is calculated). During the winter, temperatures and humidity levels can be much lower, creating total atmospheric loss as low as at least 0.13 dB instead of the 0.74 dB used by DIRECTV in its maximum PFD calculations. To determine the *maximum* PFD levels, the calculation must be done when atmospheric losses are at their *lowest* (low humidity and temperature conditions). Instead, DIRECTV's link budget calculations showed only that, assuming the *highest* atmospheric losses (high temperature and humidity), the received signal at the earth's surface will attain certain *minimum* PFD levels.

As a result, DIRECTV has proposed—and the Bureau approved—a space station whose compliance with maximum PFD limits would be as variable and unpredictable as the weather. No other applicant used link budget calculations in demonstrating compliance with § 25.208(w), and DIRECTV's blatant attempt to substitute such values to boost its power levels clearly contravened both the letter and the spirit of the Commission's carefully constructed regulatory framework for BSS space stations.

DIRECTV's misguided approach cannot be characterized as a one-time error or isolated attempt to push the envelope. To the contrary, it reflects a consistent pattern and practice of relying on an improper methodology to demonstrate compliance with the Commission's PFD

<sup>&</sup>lt;sup>11</sup> Order para. 17.

<sup>&</sup>lt;sup>12</sup> See DIRECTV Dec. 8 Ex Parte at 2 & n. 10 (citing ITU-R P.618-9).

<sup>&</sup>lt;sup>13</sup> See DIRECTV 103° W.L. Amendment, Ex. B, app. A, at A-1 ("Downlink to Miami").

<sup>&</sup>lt;sup>14</sup> See DIRECTV Dec. 8 Ex Parte Letter 3.

limits for BSS space stations. A careful review of DIRECTV's BSS applications reveals that, up until August of this year, DIRECTV used this unsanctioned and improper methodology again and again.<sup>15</sup>

In a recent application filed August 7, 2009, however, DIRECTV modified its PFD demonstration to exclude atmospheric loss terms. It is apparent from a comparison of DIRECTV's new application with the one at issue in this proceeding that DIRECTV has eliminated the use of atmospheric attenuation in its PFD demonstration. <sup>16</sup> DIRECTV's aboutface on the methodology for demonstrating PFD compliance strongly suggests that DIRECTV itself recognizes the fundamental flaws in the approach used in all of its original (and amended) BSS applications.

See, e.g., Application of DIRECTV Enterprises, LLC To Amend Its Application for Authorization To Launch and Operate DIRECTV RB-1, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 99° W.L., FCC File No. SAT-AMD-20080114-00013, Ex. B, at 12 (Jan. 14, 2008), accepted for filing, IB Acceptance Notice, 2008 WL 2627669, at \*2; Application of DIRECTV Enterprises, LLC To Amend Its Application for Authorization To Launch and Operate DIRECTV RB-3, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 107° W.L., FCC File No. SAT-AMD-20080114-00015, Ex. B, at 12 (Jan. 14, 2008), accepted for filing (corrected), Public Notice, Satellite Space Applications Accepted for Filing, Rpt. No. SAT-00537, 2008 WL 2714535, at \*1 (rel. July 11, 2008); Application of DIRECTV Enterprises, LLC To Amend Its Application for Authorization To Launch and Operate DIRECTV RB-4, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 111° W.L., FCC File No. SAT-AMD-20080114-00016, Ex. B, at 12 (Jan. 14, 2008), accepted for filing, IB Acceptance Notice, 2008 WL 2627669, at \*1; Application of DIRECTV Enterprises, LLC To Amend Its Application for Authorization To Launch and Operate DIRECTV RB-5, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 119° W.L., FCC File No. SAT-AMD-20080114-00017 (Jan. 14, 2008), accepted for filing, IB Acceptance Notice, 2008 WL 2627669, at \*1.

Application of DIRECTV Enterprises, LLC To Launch and Operate DIRECTV RB-2A, a Satellite in the 17/24 GHz Broadcasting Satellite Service at 103° W.L., FCC File No. SAT-AMD-20090807-00085, para. 10, at p.13 & n. 15 (Aug. 7, 2009).

## III. THE APPROVAL OF DIRECTV'S APPLICATION GIVES DIRECTV AN UNFAIR COMPETITIVE ADVANTAGE OVER OTHER LICENSEES WHO HAVE DEMONSTRATED COMPLIANCE WITH COMMISSION RULES

A BSS space station with a maximum PFD in excess of the Commission's rules allows an operator both to achieve a higher availability than could be achieved by compliant operators and to excessively interfere with adjacent space stations, which will result in operations at even lower availability than guaranteed by Commission rules. The competitive advantages accruing to DIRECTV in such circumstances are substantial and unfair.

The requirement to treat like cases and similarly-situated parties alike is a fundamental principle of law—one that the D.C. Circuit has repeatedly admonished the Commission to observe. To accord such competitive advantages to one licensee at the expense of others is contrary to basic principles of fairness and is arbitrary and capricious.

### IV. THE ORDER WILL ENCOURAGE OTHER LICENSEES TO USE LINK BUDGETS TO OPERATE THEIR OWN OVER-POWERED SATELLITES

If the PFD demonstration methodology utilized by DIRECTV is not rejected as contrary to the Commission's rules, other space system operators will conclude that the Commission has given its imprimatur to the use of link budget calculations and excessive atmospheric attenuation assumptions to determine PFD levels for proposed satellites. Operators will be able to unilaterally increase the power levels of their satellites simply by increasing link budget availability percentages. For example, increasing the link budget from 99.7% to 99.99% availability at 102.875° would increase atmospheric attenuation by almost 25%. As a result, the

<sup>&</sup>lt;sup>17</sup> See, e.g., Freeman Engineering Assocs., Inc. v. FCC, 103 F.3d 169, 179-80 (D.C. Cir. 1997) (remanding because FCC granted a pioneer preference to one applicant while denying such a preference to another similarly-situated applicant); McElroy Elec. Corp. v. FCC, 900 F.2d 1351, 1365-66 (D.C. Cir. 1993) ("[W]e remind the Commission of the importance of treating similarly situated parties alike or providing an adequate justification for disparate treatment.").

Commission's carefully constructed framework for limiting the power levels of BSS space stations will be eviscerated.

### V. <u>DIRECTV'S APPLICATION WAS DEFECTIVE AND NOT SUBSTANTIALLY</u> <u>COMPLETE</u>

The substantive problems outlined above should have resulted in the dismissal or denial of DIRECTV's application. But these were not the only flaws in the Bureau's decision. In fact, DIRECTV's application failed to meet the fundamental procedural requirements imposed by the Commission and should have been dismissed on that basis as well.

It is a fundamental principle of administrative law—indeed, of the rule of law, more generally—that agencies must conform to their own regulations. The Commission's regulations require the dismissal of applications that are "defective with respect to completeness of answers to questions, informational showings, internal inconsistencies, execution, or other matters of a formal character" or that do "not substantially comply with the Commission's rules, regulations, specific requests for additional information or other requirements." Moreover, under the Commission's regulations, "[a]mendments to 'defective' space station applications, within the meaning of § 25.112 will not be considered."

Achernar Broad. Co. v. FCC, 62 F.3d 1441, 1447 (D.C. Cir. 1995) ("The Commission's failure to follow the clear dictate of its own rule to 'consider all aspects of the problem' violates the rudimentary principle that agencies are bound to adhere to their own rules and procedures.") (citation omitted); Mead Data Cent., Inc. v. U.S. Dept. of Air Force, 566 F.2d 242, 258 (D.C. Cir. 1977) (referring to "well-established principle that an agency is bound by its own regulations"); Teleprompter Cable Commc'n Corp. v. FCC, 565 F.2d 736, 742 (D.C. Cir. 1977) ("We need not belabor the elementary principle that an administrative agency is bound to adhere to its own rules and procedures. . . . We conclude that the Commission's ruling is unwarranted and arbitrary. The Commission's notion of the public interest cannot justify its failure to abide by its own rules and to act in a manner consistent with its own precedents.").

<sup>&</sup>lt;sup>19</sup> 47 C.F.R. § 25.112(a).

<sup>&</sup>lt;sup>20</sup> 47 U.S.C. § 56.116.(b)(5).

DIRECTV'S application was defective within the clear and unambiguous meaning of Section 25.112(a) in that it failed to address required elements of an applicant's showing under the Commission's rules and contained material errors on the most significant issues—the computation of the reduced power levels necessary to minimize the possibility of harmful interference for a space station operating at an offset location. As a result, the Commission's regulations left the Bureau with no option but to dismiss DIRECTV's application.

Specifically, DIRECTV's amended application violated Sections 25.114(d)(15) and 25.208(w). Section 25.114(d)(15) requires applications to "provide a demonstration that [its] proposed space station will comply with the power flux density limits set forth in § 25.208(w)," or, alternatively, to certify that "all potentially affected parties acknowledge and do not object to the use of the applicant's higher power flux densities." Section 25.208(w), in turn, requires applicants to adhere to maximum power flux density limits "for all conditions, including clear sky." DIRECTV's application, however, incorporated in its power flux density calculations an adjustment for atmospheric attenuation, which included variable effects due to clouds.<sup>23</sup>

As a result, DIRECTV's nominal 103° W.L. application failed to comply with § 25.208(w) in two respects: first, by including clouds in a clear-sky calculation, and second, by proposing a power level in excess of the PFD limits set forth in the regulation. Nor did DIRECTV certify that potentially affected parties had recognized and consented to its violation of the power flux density limits, as § 25.114(d) alternatively permits.<sup>24</sup> Thus, DIRECTV's

<sup>&</sup>lt;sup>21</sup> § 25.114(d)(15)(i)-(ii).

<sup>&</sup>lt;sup>22</sup> § 25.208(w).

<sup>&</sup>lt;sup>23</sup> See, e.g., DIRECTV 103° W.L. Amendment, Exh. B, at 12.

Section 25.114(d)(15)(ii) defines affected parties as those operating within  $\pm 6^{\circ}$  of the proposed space station. Both EchoStar and Pegasus have received authorization to operate 17/24 GHz BSS space stations at the 107° W.L. orbital location. See Amendment, In re Pegasus

application did not "provide the appropriate technical showing to support [its] request" required by the Commission's Reconsideration Order issued on September 28, 2007.<sup>25</sup>

DIRECTV eventually acknowledged that it had erred in its application. In a submission in December 2008, <sup>26</sup> DIRECTV belatedly conceded the obvious—that cloud interference "would not be appropriate for use in a calculation based on 'clear sky' conditions." This concession should have doomed its application. In the first-come, first-served licensing system, DIRECTV was required to get it right the first time or not at all. A calculation of signal strength that incorporates cloudy weather does not "provide a demonstration" of compliance "for all conditions, including clear sky."

DIRECTV's eleventh-hour attempt to cure its defective application included a paragraph of new and detailed calculations, based on estimates presented in the appendix to its amended

Development DBS Corp. Authority To Construct, Launch, and Operate a System of Broadcasting Satellite Service Satellites, FCC File No. SAT-AMD-20080114-00024 (Jan. 14, 2008); Second Amendment, In re EchoStar Corp. Second Amendment To Application for Authority To Construct, Launch, and Operate a Satellite in the 17/24 GHz Broadcasting-Satellite Service, FCC File No. SAT-AMD-20080213-00043 (Feb. 13, 2008). Intelsat has received authorization to operate at the nominal 99° W.L. orbital location. See S2660—Amendment to Pending 17/24 GHz BSS Application, FCC File No. SAT-AMD-20080114-00012 (Jan. 14, 2008).

Order on Reconsideration, The 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, FCC 07-174, 22 FCC Rcd 17,951, para. 35 (rel. Sept. 28, 2007) ("Reconsideration Order").

<sup>&</sup>lt;sup>26</sup> See DIRECTV Dec. 8 Ex Parte at 2; see also Order paras. 14, 18.

<sup>&</sup>lt;sup>27</sup> DIRECTV Dec. 8 Ex Parte 2.

The Bureau has made it clear that minor errors, such as typographical errors, do not compel dismissal of an application, but serious errors—do. See, e.g., In re EchoStar Satellite LLC (F/K/A EchoStar Satellite Corporation) Authority to Construct, Launch and Operate a Geostationary Satellite in the Fixed Satellite Service Using the Extended Ku-Band Frequencies at the 101° W.L. Orbital Location, FCC Docket No. DA 04-4056, 19 FCC Rcd 24953, 24957 (2004) ("EchoStar 2004 Decision").

application.<sup>29</sup> As explained above, because these were link budget calculations, they were inappropriate to determine PFD levels. But even if this methodology had been acceptable, DIRECTV's amended application of January 14, 2008 still would not have "demonstrat[ed]" compliance with maximum PFD levels. Because DIRECTV's application rested on a fundamentally flawed methodology (the failure to show compliance under "all conditions" including clear-sky conditions), DIRECTV did not meet the burden imposed by section 25.114(d)(15), and the application could not be salvaged by an *ex parte* letter implicitly amending the application eleven months later. DIRECTV failed to file an amended application that demonstrated compliance with Section 25.208(w) at the appropriate time. As noted above, applications that are not substantially complete or otherwise defective must be rejected, and the Bureau has acknowledged that amendments to defective space station applications are not permitted.<sup>30</sup>

To permit DIRECTV to unveil the calculations purportedly supporting its application almost a year after the deadline for filing amendments had passed would afford DIRECTV an advantage that the Bureau provided to no other applicant. As the D.C. Circuit has noted, "a 'sometimes-yes, sometimes-no, sometimes-maybe policy of [deadlines] cannot . . . be squared with our obligation to preclude arbitrary and capricious management of [an agency's] mandate."<sup>31</sup>

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<sup>&</sup>lt;sup>29</sup> DIRECTV Dec. 8 Ex Parte 3 & n.13.

<sup>&</sup>lt;sup>30</sup> See 47 C.F.R. § 25.112(a); Order para. 20; see also 47 C.F.R. § 25.116(b)(5) ("Amendments to 'defective' space station applications, within the meaning of § 25.112 will not be considered.").

<sup>&</sup>lt;sup>31</sup> Green Country Mobilephone, Inc. v. FCC, 765 F.2d 235, 237 (D.C. Cir. 1985).

# VI. THE BUREAU SHOULD HAVE DISMISSED THE MANIFESTLY DEFECTIVE APPLICATION AND INCOMPLETE APPLICATION. NOT PERMITTED DIRECTV'S ELEVENTH-HOUR AMENDMENT, OR, IN THE ALTERNATIVE, DENIED THE APPLICATION

### A. The Bureau Should Have Dismissed DIRECTV's Application

It follows inexorably that the Bureau was required to dismiss or, alternatively, deny the DIRECTV's application. Any other decision would be arbitrary and capricious. As noted above, Commission regulations unequivocally require the dismissal of defective applications. Moreover, as also noted above, Commission regulations do not permit defective space station applications to be amended. In this proceeding, the Bureau violated both of these rules.

First, as Spectrum Five has demonstrated, and as DIRECTV in effect admitted in its December 8th *ex parte* letter, DIRECTV's application was manifestly defective and seriously incomplete. As noted above, applicants are required to make a showing on PFD levels under *all* conditions, including "clear sky" conditions, and, as DIRECTV itself acknowledged, DIRECTV failed to do so. Nowhere in the Order does the Bureau disagree with DIRECTV's acknowledgement that cloudy conditions are not clear sky conditions. To the contrary, the Bureau accepts that conclusion.<sup>32</sup> Thus, the Bureau committed manifest error in stating that "DIRECTV provided its PFD demonstration under clear sky conditions." By both DIRECTV<sup>34</sup>

The Order distinguishes between "clear sky conditions" and cloudy conditions. See Order para. 12 ("We note that clear sky conditions cause less signal attenuation than do *other* atmospheric conditions, such as rain and *clouds*.") (emphasis added).

Order para. 17. In stating that "DIRECTV provided its PFD demonstration under clear sky conditions," the Bureau may be referring to the re-calculations offered by DIRECTV in its December 2008 ex parte letter, but that letter was, in fact, an impermissible amendment to DIRECTV's application, and should not have been considered in the Bureau's decision.

<sup>&</sup>lt;sup>34</sup> DIRECTV Dec. 8 Ex Parte at 2.

and the Bureau's<sup>35</sup> own admissions, DIRECTV's technical showing could not be deemed to have been provided "under clear sky conditions," in plain violation of § Section 208(w).

In a footnote, the Bureau, citing 47 C.F.R. § 25.112(b)(2), notes that the Commission may waive or allow an exception to the rule that applications must be substantially complete.<sup>36</sup> But Section 25.112(b)(2) does not excuse the Bureau's failure to dismiss DIRECTV's application. In the Reconsideration Order, the Commission expressly directed the Bureau to reject any amended applications that were not substantially complete.<sup>37</sup> This express directive left the Bureau little, if any, discretion to accept defective or not-substantially-complete applications.

Moreover, Section 25.112(b)(2) is irrelevant to the Bureau's disposition of DIRECTV's application. Section 25.112(b)(2) allows certain defective applications to be accepted if the Commission "waives (or allows an exception to), in whole or in part, any rule, regulation, or requirement." Here, however, the Bureau has not waived any rule, regulation, or requirement pertaining either to the showing needed to be made by applicants or the rules requiring applications to be substantially complete. To the contrary, the Bureau concluded that DIRECTV's application was substantially complete. Because Section 25.112(b)(2) pertains only to applications that have been found to be incomplete, and contemplates waivers of rules,

<sup>&</sup>lt;sup>35</sup> Order para. 12.

<sup>&</sup>lt;sup>36</sup> See id. para. 7 n.24.

<sup>&</sup>lt;sup>37</sup> Reconsideration Order para. 37.

<sup>&</sup>lt;sup>38</sup> 47 C.F.R. § 25.112(b)(2).

<sup>&</sup>lt;sup>39</sup> See Order paras. 9, 25.

regulations, and requirements, that provision is not relevant to the Bureau's decision here, and any reliance on it would itself be arbitrary and capricious.<sup>40</sup>

The Bureau's other attempts to evade the Commission's unambiguous regulations requiring the dismissal of defective applications are equally unavailing. The Bureau maintains that the requirement for substantial completeness does not mean that an "application must be perfect in all respects and have no error. It was never intended that any single error in the information required, no matter how minor, would be the basis for dismissal of the application." The Bureau goes on to accuse Spectrum Five of "conflat[ing] the completeness review with the substantive review of an application on the merits" and of contending that any failure of an applicant to comply with a substantive rule should result in dismissal "without regard to the materiality or magnitude of the non-compliance."

Spectrum Five, however, is not asserting that DIRECTV's application had to be perfect in every respect. As noted above (Section II, *supra*) Spectrum Five is not pointing to a merely technical or minor error in DIRECTV's application. Rather, Spectrum Five has shown that DIRECTV's application includes a patently defective analysis on a material issue. DIRECTV, by its own admission, failed to supply a critical element of the required analysis: a PFD level analysis in all conditions, including clear sky conditions. And it relied on a patently inappropriate link budget analysis, one which substantially understates power levels a material

<sup>&</sup>lt;sup>40</sup> Moreover, as the Commission has recognized in other contexts, waivers may be granted only when they would not be inconsistent with the purpose underlying the rules or because of unusual factual circumstances that render application of the rule inequitable, unduly burdensome, or contrary to the public interest, or that leave the applicant without alternatives. *See*, *e.g.*, 47 C.F.R. § 1.925(b)(3); *In re Alascom, Inc*, 18 FCC Rcd 16,450, 16,456 (2003). Here, a waiver of the PFD limits clearly would be inconsistent with the purpose of the Commission's rules and the public interest.

<sup>&</sup>lt;sup>41</sup> Order para. 22.

<sup>&</sup>lt;sup>42</sup> *Id.* para. 23.

portion of the time, resulting in a blatant violation of Section 25.208(w), to the detriment of competitors in general, and neighboring satellites in particular. None of the reasons enunciated by the Bureau in the Order justifies the Bureau's failure to dismiss the application.

Citing its review of a 17/24 GHz BSS space station application filed by Intelsat North America LLC ("Intelsat"), however, the Bureau states that "the assessment that an application is substantially complete does not mean that the Commission has no technical concerns regarding an application." The Bureau's reference to the minor technical concerns raised by the Intelsat application—and the Bureau's response to it—cannot justify the failure to dismiss DIRECTV's application as defective. The fundamental methodological defects and substantive omissions plaguing DIRECTV's application cannot be equated with the technical concerns presented by Intelsat's application. As the Bureau itself notes in paragraph 24 of the Order, the Bureau determined that a "slight change was required in Intelsat's methodology for calculating its power levels." And the change required in the Intelsat proceeding was not the result of an utter failure to conform to Commission regulations, as was the case with DIRECTV's application. Here, by contrast, DIRECTV has proposed to operate a satellite that would materially exceed the PFD limits, both because of the use of link budget calculations and the inclusion of clouds. 45

### B. The Bureau Should Not Have Permitted DIRECTV to Amend the Application

The Bureau not only failed to dismiss the application but also allowed the implicit amendment in DIRECTV's December 2008 ex parte and then relied on the amendment in the

<sup>&</sup>lt;sup>43</sup> *Id.* para. 24.

<sup>&</sup>lt;sup>44</sup> *Id*.

<sup>&</sup>lt;sup>45</sup> Moreover, the *Intelsat* proceeding also is distinguishable from the instant proceeding in that no parties sought denial of Intelsat's application.

Order.<sup>46</sup> These actions clearly violated unambiguous Commission regulations.<sup>47</sup> As the Bureau itself has noted, "[a]llowing applicants to cure applications after they are filed could adversely impact other applicants filing complete applications that are 'second-in-line' to the first application. Moreover, allowing applicants to 'cure' defects . . . after filing could encourage applicants to file incomplete, internally inconsistent, or otherwise defective applications to receive 'first-in-line' status. This is patently inconsistent with the rationale underlying the 'first-come, first-served' procedure, which is designed to expedite service to *the public*."<sup>48</sup>

The Order seeks to justify the Bureau's reliance on DIRECTV's December 2008 implicit amendment to its application by noting that the Commission's licensing application procedures "allow the Commission to request from any party, at any time, additional information concerning any application." Thus, according to the Bureau, while DIRECTV supplied additional information in an *ex parte* filing, the Commission could have requested such information to facilitate its processing of DIRECTV's application.<sup>49</sup>

Section 25.111(a), however, does not trump Section 25.116(b)(5)'s express prohibition on amendments to defective space station applications. Nothing in Section 25.111(a) states that such additional information can be used to amend or cure an application that, like DIRECTV's, is defective within the meaning of Section 25.112. Indeed, the Bureau recognized this in a 2006

<sup>&</sup>lt;sup>46</sup> See Order para. 18.

<sup>&</sup>lt;sup>47</sup> See 47 C.F.R. § 25.116(b)(5) ("Amendments to 'defective' space station applications, within the meaning of § 25.112 will not be considered.").

EchoStar 2004 Decision, 19 FCC Rcd at 24958. See also In re: Pegasus Development DBS Cooperation Authority to Construct, Launch, and Operate a System for Direct Broadcast Satellites in the Broadcasting Satellite Service, FCC File Nos. SAT-LOA-20020322-00032, SAT-LOA-20020322-00033, SAT-LOA-20020322-00034, 21 FCC Rcd. 6,403, 6406 (2006) ("Allowing applicants, like Pegasus, to cure applications after they are filed could adversely impact other applicants, including 17 GHz applicants, filing complete applications that are 'second-in-line' to the first application.") (footnote omitted).

<sup>&</sup>lt;sup>49</sup> Order para. 14 n.37.

ruling on a request for reconsideration filed by EchoStar Satellite LLC.<sup>50</sup> There, the Bureau rejected EchoStar's argument that the Satellite Division should have requested additional information before denying EchoStar's applications. The Bureau stated "While the Commission may request additional information from any party at any time concerning an application, it is not the Commission's duty to perfect a materially deficient application. With the adoption of the *First Space Station Reform Order*, the Bureau has strictly enforced its Part 25 rules, which require the Bureau to return as unacceptable any application that is 'defective with respect to completeness of answers to questions, informational showings, [or] internal inconsistencies.'"<sup>51</sup>

The Bureau's statement in the *EchoStar* proceeding clearly was correct. A contrary interpretation of Section 25.111(a) would enable the Bureau, on a mere whim, to exempt one defective application from Section 25.116(b)(5) merely by asking for information that might cure the defects of that application, while dismissing another equally defective application without affording an opportunity for amendment. Section 25.111(a) should not be construed as a license for such arbitrary and capricious decision making, and, therefore, the Bureau erred in relying on it to permit DIRECTV to amend its application through its December 2008 *ex parte* letter. In addition, the Bureau did not request DIRECTV's December 2008 *ex parte* or the information contained in it. Instead, DIRECTV asserted that it made the *ex parte* presentation because DIRECTV "wish[ed] to address [Spectrum Five's] arguments.<sup>52</sup>

In re EchoStar Satellite LLC Authority to Construct, Launch and Operate Geostationary Satellites in the Fixed-Satellite Service Using the Ka And/or extended Ku-bands at the 83° W.L. 105° W.L., 113° W.L. and 121° W.L. Orbital Locations, FCC File Nos. SAT-LOA-20030827-00180, -00182, -00185, -00187 Call Signs S2493, S2495, S2498, S2500, 21 FCC Rcd. 4,060, 4065 (2006).

<sup>&</sup>lt;sup>51</sup> *Id.* para. 13 (footnotes omitted; citing 47 C.F.R. § 25.112(a)(1)).

<sup>&</sup>lt;sup>52</sup> DIRECTV Dec. 8 Ex Parte at 1.

Moreover, in the Reconsideration Order, the Commission specified a formal process for current applicants to amend their pending applications and "direct[ed] the Bureau to dismiss, as defective, any application that is not amended by the date specified [by the Bureau] in the Public Notice," and to "dismiss as defective any amended applications that are not substantially complete." In accordance with the Reconsideration Order, the Bureau issued a Public Notice on December 5, 2007, establishing deadlines of January 14, 2008 for filing amended applications, and February 13, 2008 for further amendments for certain offset applicants in circumstances not relevant here. The Bureau reiterated the Commission's requirement that any application not amended by January 14, 2008 would be "dismissed as defective." Having failed to appropriately amend its application by the date set by the Bureau, DIRECTV plainly should not have been permitted to amend its application through an *ex parte* filing eleven months after the date amendments were due.

In addition to the Bureau's error in failing to dismiss DIRECTV's application, the Bureau also erred in failing to deny the application. Section 25.156(a) provides that an application can only be granted if, in addition to other factors, "the proposed facilities and operations comply with all applicable rules, regulations, and policies." As asserted above, DIRECTV's proposed

<sup>&</sup>lt;sup>53</sup> Reconsideration Order para. 35.

<sup>&</sup>lt;sup>54</sup> *Id.* para. 37.

See Public Notice, International Bureau Establishes Deadline for Amendments to Pending 17/24 GHz BSS Applications, DA 07-4895, 22 FCC Rcd 20,991, 20,991-92 (rel. Dec. 5, 2007). The opportunity to file a second amendment on Feb. 13, 2008 was limited to applicants "seeking to operate a full-power space station with full interference protection" at an offset location "if another applicant has filed a conflicting application for the adjacent Appendix F location or its associated offsets." 22 FCC Rcd at 20992 (footnotes omitted).

<sup>&</sup>lt;sup>56</sup> *Id.* at 20,991.

<sup>&</sup>lt;sup>57</sup> 47 C.F.R. § 25.156(a).

space station does not comply with Section 25.208(w)'s PFD limits, and the application must therefore be denied.

By failing to dismiss or deny the application, and by allowing DIRECTV to amend it through an *ex parte* filing, the Bureau erred and the Order must be reversed.

## VII. THE BUREAU'S FAILURE TO ADDRESS SPECTRUM FIVE'S CRITICISMS OF THE LINK BUDGET CALCULATIONS WAS ARBITRARY AND CAPRICIOUS

As noted above, in the Order, the Bureau indicated its intent to address each of Spectrum Five's assertions about the defectiveness of DIRECTV's application. Although acknowledging that Spectrum Five had assailed the link budget calculations, the Bureau did not address the issue forthrightly, inferring that it was not necessary to do so by performing its own calculations without the maximum loss link budget assumptions. As demonstrated above (at 4-6, *supra*), that exercise went seriously astray by using the wrong PFD limit for the offset location. The Bureau also did not address Spectrum Five's arguments regarding the problems with DIRECTV's reliance on budget link calculations.

The Bureau's failure to address a problem of the importance of the link budget calculations was arbitrary and capricious. As the Supreme Court has stated, agency action is arbitrary and capricious if the agency "entirely failed to consider an important aspect of the problem" before the agency. An erroneous analysis that results in excessively high PFD levels is certainly an "important aspect of the problem" before the agency.

The Bureau could and should have utilized realistic, fact-based assumptions to assess the importance of the link budget issue. Instead, in granting the application, the Bureau did not even

<sup>59</sup> Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29,

43 (1983).

<sup>&</sup>lt;sup>58</sup> Order para. 9.

address the propriety of DIRECTV's reliance on link budget calculations, much less explain whether DIRECTV's use of link budget calculations was permissible or why Spectrum Five's arguments were invalid. If the Bureau had not viewed the issue as important, it would not have set up a process to consider Spectrum Five's arguments articulated in the January 12<sup>th</sup> ex parte letter. Having teed the issue up for consideration, the Bureau cannot now fail to address the merits of Spectrum Five's arguments. If the Bureau disagreed with Spectrum Five's arguments regarding the impropriety of using link budget calculations in a PFD analysis, it should have addressed those arguments in the Order.<sup>60</sup>

#### **CONCLUSION AND RELIEF REQUESTED**

For the foregoing reasons, the Bureau should rescind the Order, dismiss or deny DIRECTV's application, and consider Spectrum Five's application, which is next in line.

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<sup>&</sup>lt;sup>60</sup> This is the clear teaching of *State Farm* (see note 59, supra). An agency is not obligated to address every issue raised by commenters, but must consider each "important aspect of the problem" before the agency (State Farm, 463 U.S. at 43).

#### **CERTIFICATE OF SERVICE**

I, Howard W. Waltzman, hereby certify that on this 27th day of August, 2009, I caused to be delivered a true copy of the foregoing by first-class United States mail, postage prepaid, upon the following:

William M. Wiltshire Harris, Wiltshire & Grannis LLP 1200 18th Street, N.W. Washington, D.C. 20036 Counsel for DIRECTV Enterprises LLC

Howard W. Waltzman