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

Petition for Declaratory Ruling and Rulemaking With Respect to Defining, Predicting and Measuring "Grade B Intensity" For Purposes of the Satellite Home Viewer Act	RM No. 9345

PETITION FOR DECLARATORY RULING AND/OR RULEMAKING OF ECHOSTAR COMMUNICATIONS CORPORATION

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SUMMARY

The Satellite Home Viewer Act ("SHVA"), 17 U.S.C. § 119, permits certain satellite retransmissions of broadcast signals. These include the satellite retransmission of a distant network station to households that, among other things, do not receive a local signal of "Grade B intensity," as the term is defined by this Commission. The SHVA's definition of "unserved households" incorporates the Commission's definition of Grade B intensity – a numerical measure found in the Commission's rules – but does *not* incorporate any model for predicting or measuring that intensity. To date the FCC has not exercised its authority to provide direction on how to predict or measure Grade B intensity for purposes of the SHVA's "unserved households" restriction.[1] The Commission has the clear authority to, and should, fill this gap and develop a model for predicting, and rules for measuring, Grade B signal intensity for SHVA purposes. Therefore, pursuant to §§ 1.2 and 1.401 of the Commission's rules, EchoStar Communications Corporation ("EchoStar") hereby petitions the Commission to institute a rulemaking and/or issue a declaratory ruling confirming that:

- For the purposes of SHVA, the "Longley-Rice" methodology is not an appropriate tool for predicting whether a household receives a signal of Grade B intensity, unless it is substantially revised to replicate realistically the intensity actually received at the homes of American consumers;
- Both the Longley-Rice and the Commission's conventional Grade B predictive models are based on propagation assumptions that do not take into account trees, buildings, radio transmitter stations or other

[1] In fact, the Commission has specified that the predictive and measurement methodologies developed to date apply **only to** certain, enumerated situations, including selection of transmitter sites by broadcast applicants and compliance by broadcasters with Commission obligations.

obstructions and several morphological characteristics and factors attenuating a TV signal;

- Both the Longley-Rice method and the Commission's conventional Grade B contour model for predicting whether a household receives a signal of Grade B intensity are based on three medians (50% of the locations, 50% of the time, with 50% confidence) and thus on extremely attenuated probabilities of receiving service. The satellite reception equipment sold by EchoStar, the electricity in our homes, and nearly every other product purchased by the American consumer is expected to be reliable 99% or more of the time. American consumers would never purchase a product that is reliable less than 50% of the time;

- The methodology developed by the Commission for measuring Grade B intensity is similarly inappropriate for SHVA purposes. That measurement method is based on an antenna height of 30 feet, an assumption that may provide no comfort for residents of single-story houses. It is based on a 100 foot measurement run in the street, rather than a reading at the home in question. This leads to inherently unreliable data not only because of distance from the home, but also because of the lack of obstructions such as trees and buildings that may seriously inhibit signal strength at the home. Furthermore, the measurement methodology of Section 73.686 assumes that the antenna has been oriented and designed for maximum gain with respect to each and every station, which is not possible without an actuated antenna. The American consumer should not be required to spend substantial sums on actuators, line amplifiers and other exotic features in order to obtain a Grade B intensity signal. Certainly such extraordinary measures are inconsistent with the SHVA standard of a "*conventional* outdoor rooftop receiving antenna". Finally, the measurement method of Section 73.686 ignores factors that attenuate the signal on its way from the roof to the consumer's television sets;

- These probabilities, propagation assumptions and measurement rules may be appropriate for the purpose of avoiding any potential for interference between adjacent stations, but they are inappropriate for ensuring, to the extent possible, that the purpose of the SHVA is achieved so that every American can receive network service. In fact, predictive models and measurement methodologies based on such assumptions will disenfranchise perhaps millions of households that will neither get a local signal over the air for an acceptable percentage of the time, nor be eligible to receive a distant network signal by satellite. Accordingly, the Commission should now develop a model for predicting Grade B intensity for purposes of SHVA that adequately takes into account the need to permit network service for as many Americans as possible. Such a model should be based on probabilities of receiving service that are comparable to the reliability expected by the U.S. consumer. It should rely on propagation assumptions that recognize the multiplicity of obstacles on the

signal's way to the consumer's home. Further, the Commission should now develop a methodology to measure Grade B intensity *in the home*, taking into account the real world factors affecting signal intensity.

The Commission's jurisdiction arises from the SHVA, 17 U.S.C. § 119(d)(10). The Act defines the key statutory term "unserved household" based on the concept "Grade B intensity," which is in turn used "as defined" by the Commission. This reference to the Commission was clearly intended to track the Commission's definition of "Grade B intensity" as it changes from time to time: "It is of course not true that whenever Congress enacts legislation using a word that has a given administrative interpretation it means to freeze that administrative interpretation in place."[2] The Commission thus has the power to change the definition of Grade B intensity and therefore the attendant ability to develop a model for predicting it and rules for measuring it.[3]

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[2] *Lukhard v. Reed*, 481 U.S. 368, 379 (1987); *see also Helvering v. Wilshire Oil Co*, 308 U.S. 90, 100-101 (1939) ("[It is not true that] regulation interpreting a provision of one act becomes frozen into another act merely by reenactment of that provision, so that that administrative interpretation cannot be changed prospectively through exercise of *appropriate rule-making powers*."). In addition, the Act's legislative history explains that "Grade B intensity" was to be used as defined by the Federal Communications Commission, that definition was only "currently" embodied in § 73.683(a).

[3] The Commission also has the power to revise its numerical definition of Grade B intensity, and should do so at least in the long-term, in its effort to ensure high-quality network service for all Americans. At a minimum, the redefinition of "Grade B intensity" should take into account multipath interference and ensure that no consumers have to tolerate "ghosting" before they qualify for distant service. While multipath interference and the attendant ghosting may have been generally acceptable to the consumer in the 1950s at the time when "Grade B intensity" was first defined, significant ghosting is not acceptable to the typical consumer today, and the definition of the term should therefore no longer ignore these factors. Nevertheless, EchoStar recognizes that the redefinition of "Grade B intensity" for SHVA or any other purposes may require careful, fully informed and elaborate analysis. While the Commission should undertake that analysis, EchoStar requests that the Commission processed expeditiously with the other issues covered by this Petition – the development of a predictive method and establishment of measurement rules.

The relief requested is narrow. It is limited to the Grade B intensity issues as they affect the SHVA test of whether a household may receive a distant network signal by satellite, and does not extend to the Commission's use of predictive models or measurement rules in any other regulatory area. At the same time, the relief requested is significant and compelled by the public interest – ensuring network broadcast service for all (or at least nearly all) consumers that cannot receive Grade B intensity local signals over the air with an appropriate degree of reliability. There is currently no applicable model for predicting or measuring Grade B intensity since : a) the statutory definition pointedly stops short of incorporating the Commission's then existing Grade B predictive contour methodology; b) the Commission's rules provide that this methodology applies to restrictively enumerated purposes; and c) outside the DTV allotment context, the Commission has not applied any other methodology (such as Longley-Rice) except on a case-by-case basis. Unless the Commission issues rules and provides clarity on issues that lie within its exclusive expertise, there is an immediate risk that hundreds of thousands of consumers will be barred from receiving a distant network signal even though they do not, in fact, receive a local signal of Grade B intensity. Similarly grievous risks lurk if the Commission were to adopt a predictive model based on the fiction that a consumer receives a Grade B intensity signal if that consumer is expected to receive that signal 50% of the time, with 50% reliability, and where even then he/she may not receive an adequate signal because of the intensity attenuating factors mentioned above.

Indeed, a Federal District Court in Florida recently issued a nationwide preliminary injunction against a satellite distributor -- PrimeTime 24 -- barring distant network

service to many of PrimeTime 24's customers.[4] While the Florida Court appropriately recognized the Commission's expertise in this area, it based its ruling on misguided and inaccurate assumptions about the Commission's rules, threatening to leave many consumers without *any* network service.[5] Yet another federal court more recently found that PrimeTime 24 had violated the Copyright Act, but based its findings on *that court's different* assumptions about what the Commission's rules say on this subject.[6] Indeed, the very notion that two District Courts could issue such different orders *attempting to read what the Commission has or would have said* on the Grade B issues graphically illustrates the need for this Commission to step in to conduct a rulemaking on the meaning of Grade B intensity under the SHVA.

Specifically, the Florida Court endorsed a variant of the Longley-Rice methodology presented to it based on the erroneous belief that this variant was sanctioned by the Commission. In fact, the Commission has accepted use of the Longley-Rice method in the context of its digital television allotment plan (and has applied it in a materially different manner than presented to the Florida Court). With respect to analog television, the Commission does *not*

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[4] *See CBS Inc., et. al. v. PrimeTime 24 Joint Venture*, No. 96-3650-CIV-NESBITT (S.D. Fla. May 13, 1998) (order affirming in part and reversing in part Magistrate Judge's Report and Recommendation) ("*PrimeTime 24* Order").

[5] An August 6, 1998 letter from NAB's president, Edward O. Fritts, to several members of Congress claims that "no subscribers who truly cannot receive local signals over-the-air will be affected by this ruling." In fact, under the Longley-Rice model used by the Florida Court, a substantial percentage of the households that are predicted as receiving an adequate intensity signal in fact do not receive such a signal by definition.

[6] *See ABC, Inc. v. PrimeTime 24, Joint Venture*, Order, Civil Action No. 1:97CV00090 (M.D.N.C. July 16, 1998) (*"North Carolina Order"*).

apply the complex Longley-Rice methodology except on a case-by-case basis and subject to particularized evidentiary showings.

Furthermore, the Florida Court based its injunction on the highly-attenuated probabilities – 50% of the locations 50% of the time with a 50% confidence – that are used by the Commission for allotment purposes. The North Carolina court, for its part, did not recognize any model for predicting Grade B intensity. These rulings illustrate a serious inconsistency in the interpretation of matters within the expertise of the Commission, which the Commission is uniquely qualified to remedy.

A model for predicting, and rules for measuring, Grade B intensity for purposes of the SHVA are clearly necessary – the alternative suggested by some is actual measurements for each and every one of millions of satellite subscribers, and uncertainty about how that test should be conducted. At the same time, a predictive curve based on low probabilities and constrained by an extremely low confidence factor is inappropriate where it means that a significant number of households within the 50-50-50 contour neither receive a signal of Grade B intensity nor are able to receive a distant network signal by satellite.

The importance of network service to all Americans is beyond any doubt. The availability of common network programming is of unique "culture-shaping" value, and network service has been an essential part of the national discourse. The paramount goal of ensuring network service for every consumer is a fundamentally different consideration from the goal of avoiding interference that underlies the Commission's development of signal strength predictive models. Therefore, the Commission should develop and adopt a predictive model and measurement method for SHVA purposes that should be based on probabilities and assumptions more closely approaching the standards consumers demand of any provider of video service.

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[1] In fact, the Commission has specified that the predictive and measurement methodologies developed to date apply **only to** certain, enumerated situations, including selection of transmitter sites by broadcast applicants and compliance by broadcasters with Commission obligations.

purposes. Therefore, pursuant to §§ 1.2 and 1.401 of the Commission's rules, EchoStar Communications Corporation ("EchoStar") hereby petitions the Commission to institute a rulemaking and/or issue a declaratory ruling *confirming* that none of the predictive methodologies or measurement rules that have been developed to date for completely different purposes is appropriate to predict Grade B intensity for SHVA purposes; and *establishing* a SHVA-appropriate predictive model and measurement method.

I. BACKGROUND

Under the Satellite Home Viewer Act of 1994 ("SHVA" or "the Act"), satellite carriers may retransmit the distant signal of a network station to "unserved households."[2] "Unserved households," in turn, are defined as those that:

> cannot receive, through the use of a conventional outdoor rooftop receiving antenna, an over-the-air signal of grade B intensity (*as defined by the Federal Communications Commission*) of a primary network station affiliated with that network. . . .[3]

Thus, the test of which household can receive satellite retransmission of a distant network signal depends on whether *that particular* household can receive an over-the-air signal of a certain intensity from the local network affiliate.

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[2] 17 U.S.C. § 119(a)(2)(B).

[3] 17 U.S.C. § 119(d)(10) (emphasis added). To qualify as "unserved," a particular household must also not have subscribed within the previous 90 days to a cable system providing the signal of a primary network station. *Id.* The other prerequisite of "unserved household" status confirms the particularized nature of the test and the congressional interest in ensuring network service for each and every household that does not receive a network signal either by cable or satellite. It would be facially inappropriate to apply the 90-day waiting period statistically so as to exclude even one particular household that has not subscribed to cable service within the prior 90 days.

The Commission's definition of Grade B intensity referenced in the SHVA can be found at 47 C.F.R. § 73.683(a): 47 dBU for channels 2-6, 56 dBu for channels 7-13, and 64 dBu for channels 14-69. Importantly, the SHVA bases the definition of "unserved households" on that definition and not on any system for *predicting* or rules for *measuring* that intensity. Indeed, the SHVA explicitly acknowledges the existence of such predictive systems when it references in other provisions the Commission's "Grade B contour."[4] Nevertheless, the SHVA refrains from making these contours part of the key "unserved households" definition.[5]

For other purposes, the Commission has also developed the so-called Grade B contour – a method for *predicting* whether a household is *likely* to receive a signal of Grade B intensity. Specifically, the Commission has established that model for the primary purpose of allotting areas to broadcasters establishing transmitter sites so as to avoid interference from adjacent broadcasters operating on the same frequencies. The Rules codifying Grade B predictive contours specifically limit their use to "only" estimation of transmitter coverage, calculation of the multiple ownership rules, and determining compliance with the minimum field strength rules.[6] The Grade B contour model is based on a combination of measured data,

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[4] 17 U.S.C. § 119(d)(8) established certain temporary presumptions as to who must conduct signal testing for an individual household depending on whether that household falls within or without a Grade B contour. This provision has now expired. *See* Pub. L. 103-369 § 6(c) (expiration date of December 31, 1996). Grade B contours are also used to define a network station's "local market," 17 U.S.C. § 119(d)(11), which in turn had been used to determine how many signal measurements a satellite provider must conduct. 17 U.S.C. § 119(d)(8)(c) (expired).

[5] Moreover, the SHVA's legislative history explains that this provision refers to the definition of Grade B intensity found in 47 C.F.R. § 73.683(a); no mention is made of the Commission's rules for measuring intensity for other purposes, *see* 47 C.F.R. § 73.686.

[6] 47 C.F.R. § 13.683(c). Other Commission rules have made Grade B predictive contours specifically applicable in a number of other situations, such as: allotment of geographic areas to broadcast stations, *see* 47 C.F.R. § 73.601 *et seq.* (specifically, the Commission affords

(Continued ...)

propagation formulae and a key probability: it is defined so that *50% of households* will likely receive a Grade B signal; *a household will likely receive an adequate signal 50% of the time; and a household will receive an adequate signal at any given time only* with a confidence of 50%.

Because the model uses a nationwide terrain roughness average – as opposed to actual topography measurements – at certain distances from a transmitter, additional terrain dependent models have been developed that purport to take into account actual terrain roughness. Those models are more complex, as they require input regarding the terrain particularities of an individual market. The so-called Longley-Rice methodology is one such terrain-dependent model. The Commission has accepted the Longley-Rice methodology for allotment purposes in the *digital* television proceeding (*see* below). Outside that one proceeding, the Commission has considered the appropriateness of Longley-Rice or other methodologies supplementing its traditional curves only on a case-by-case basis.

A Federal District Court in Florida was recently confronted with the SHVA's "Grade B intensity" standard in a lawsuit brought by certain networks and network affiliated stations against PrimeTime 24, a satellite carrier unaffiliated with EchoStar.[7] Ruling on a request

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interference protection between adjacent broadcasters by ensuring that the ratio of the desired to the undesired signal exceeds a certain minimum, where the desired signal is calculated from the F (50,50) curves and the undesired signal from the F (50,10) curves. *See, e.g., Table of Television Channel Allotments*, Notice of Proposed Rule Making, 83 F.C.C. 2d 51 (1980)); controlling interference from the Paging and Radiotelephone Service, *see* 47 C.F.R. §§ 22.265(b)(3), 22.657, the Maritime Service, *see* 47 C.F.R. §§ 80.215, 80.385, 80.475, the Private Land Mobile Radio Service, *see* 47 C.F.R. § 90.307, and the Interactive Video and Data Service, *see* 47 C.F.R. 95.859; and ensuring TV broadcast station protection, *see* 47 C.F.R. § 74.705(a).

[7] *See CBS Inc., et. al. v. PrimeTime 24 Joint Venture*, No. 96-3650-CIV-NESBITT (S.D. Fla. May 13, 1998) (order affirming in part and reversing in part Magistrate Judge's Report (Continued ...)

for preliminary injunction, the Florida Court appropriately recognized the Commission's expertise in this area: "In stating that the FCC shall define a signal of grade B intensity, Congress endorsed the FCC's method of determining such signals." *PrimeTime 24* Order at 16.[8] The Florida Court, however, inappropriately based its ruling on misguided and inaccurate assumptions about the Commission's rules, threatening to leave hundreds of thousands of consumers without *any* network service.

Thus, to find "Grade B intensity," the Florida Court endorsed a variation of the predictive Longley-Rice methodology based on its view that this predictive methodology (and particular variant) had been accepted by the FCC – indeed was "the" FCC approach. That view was based on representations made by plaintiffs that: "[t]o determine stations' current coverage areas, the FCC has relied on Longley-Rice maps. . . . Replacement *of the FCC approach* with [defendant's suggested predictive method] would result in a major underprediction of stations' actual coverage areas."[9] Accepting plaintiffs' characterization of Commission policy, the Florida Court preliminarily enjoined the defendant satellite carrier from

> retransmitting CBS or Fox network programming to any customer *within an area shown on a Longley-Rice propagation map as receiving a signal of at least grade B intensity* without either (1) obtaining the written consent of a CBS or Fox primary network

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and Recommendation) ("*PrimeTime 24* Order"). The Court is currently conducting a trial in that proceeding.

[8] *See also id.* at 17 ("Congress clearly defined a grade B signal based upon the FCC's objective standard and not on whether a household received acceptable picture quality. PrimeTime 24's emphasis on the latter runs contrary to the SHVA."); *id.* at 20 ("The test is whether the household can receive a grade B signal as defined by the FCC.").

[9] *See* Plaintiffs' Response to Defendant's "Motion for Clarification" of this Court's May 13 Order and Request for Hearing, in No. 96-3650-CIV-NESBITT at 5-6 (S.D. Fla, filed June 2, 1998) ("Plaintiffs' Post-Injunction Response") (emphasis added).

> station and the relevant network, or (2) providing the station with a signal strength test of the subscriber's household showing that it cannot receive a signal of grade B intensity as established by the FCC.[10]

The Commission has never sanctioned universal nationwide use of the Longley-Rice model outside the digital television allotment context, and even there has applied it in a materially different manner than presented to the Florida Court. Moreover, the Commission has never passed on the appropriateness of any predictive test (including its own conventional test) to gauge "Grade B intensity" for the purposes of SHVA.

Indeed, a second Federal District Court in North Carolina, facing the same question as that faced by the Florida Court, defined the term "Grade B intensity" with reference to neither predictive Grade B contours nor the Longley-Rice methodology.[11] Instead, the North Carolina Court determined that "SHVA's reference to 'an over-the-air signal of Grade B intensity (as defined by the Federal Communications Commission)' most naturally refers to the dBu's required for a signal of Grade B strength for each particular channel."[12] While that statement may be correct as far as it goes, it does not offer a realistic way of enforcing the "unserved household" restriction. A model predicting Signal B intensity as well as a measurement method, are clearly necessary to that end,[13] and the court in North Carolina has not yet decided how to enforce its findings. In any event, the very notion that two District Courts

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[10] *See PrimeTime 24* Order at 34-35 (emphasis added).

[11] *See ABC, Inc. v. PrimeTime 24, Joint Venture*, Order, Civil Action No. 1:97CV00090 (M.D.N.C. July 16, 1998) (*"North Carolina Order"*).

[12] *Id.* at 13.

[13] The plaintiffs in the Florida case have conceded this point by proposing their own preferred predictive model.

could issue such different orders *attempting to read what the Commission has or would have said* on the Grade B issues underlines the need for the Commission to interpret Grade B intensity consistent with the SHVA mandate.

The Commission has also promulgated a methodology for *measuring* signal strength, codified at 47 C.F.R. § 73.686. As with the traditional Grade B contour, use of this methodology is limited to a few specific areas, and is specifically *not* referred to in the SHVA. (Indeed, the SHVA's legislative history, while referencing "Grade B signal strength," is silent as to how one should measure such strength.[14]) This measurement methodology contains several features that make it particularly inappropriate for use in the SHVA context: it requires measurements to be taken at a height of 30 feet, *see* 47 C.F.R. § 73.686(b)(2); it fails to acknowledge or compensate for the fact that signal strength attenuates from an antenna to a television set; and it assumes that antennas are always perfectly positioned to realize maximum gain on a given individual channel.[15] The current rules also require measurements at "accessible roads" and a 100-foot "mobile run" along the street (where of course trees, buildings and other obstructions tend to be much less of a problem than would be the case with reception at the home).[16] "Grade B intensity" as used in the SHVA, however, refers to the intensity of the signal

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[14] H. Rep. No. 100-887 Part 1, at 26 (1988); *see also* H. Rep. No. 100-887 Part 2, at 25 (1988). Note that Congress's delegation of authority to the Commission is entirely consistent with the *Lukhard* line of cases, discussed *supra*.

[15] Under 47 C.F.R. § 73.686(b)(2), the receiving antenna must be "rotated to determine if the strongest signal is arriving from the direction of the transmitter," and must be oriented so that the sector of its response pattern over which maximum gain is realized is in the direction of the transmitter."

[16] *See* 47 C.F.R. § 73.686(b)(1), (b)(2).

actually received *at the home*, and measurements at the street cannot accurately measure that value.

Accordingly, EchoStar respectfully requests that the Commission: (1) issue a declaratory ruling stating that Longley-Rice maps are, absent input of additional factors to more accurately reflect reality, inappropriate predictive tools for determining whether a household is "unserved" under the SHVA; and (2) institute a rulemaking to develop a SHVA-appropriate predictive model and Grade B intensity measurement methodology.

II. ARGUMENT

A. The Commission Has Jurisdiction to Define Grade B Intensity and Develop a Model for Predicting It and Rules for Measuring It

The Commission's jurisdiction to predict and measure Grade B intensity for purposes of the SHVA derives from its power, conferred by the SHVA, to define the term "Grade B intensity." The SHVA's definition of "unserved households" uses the term "Grade B intensity" "as defined" by the Commission. In a recent filing against a petition filed by the National Rural Telecommunications Cooperative ("NRTC"), the National Association of Broadcasters suggests that the relevant words "as defined by the Federal Communications Commission" refer to a definition that is frozen in time and forever unalterable.[17] The Supreme Court has explained, however, that precisely the reverse is the case with statutory references to administrative interpretations: "It is of course not true that whenever Congress enacts legislation

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[17] *See* Preliminary Response of National Association of Broadcasters to Emergency Petition for Rulemaking filed by the National Rural Telecommunications Cooperative at 21 (filed July 17, 1988) ("NAB Response").

using a word that has a given administrative interpretation it means to freeze that administrative interpretation in place." *See Lukhard v. Reed*, 481 U.S. 368, 379 (1987). *See also Helvering v. Wilshire Oil Co*, 308 U.S. 90, 100-101 (1939) ("[It is not true that] regulation interpreting a provision of one act becomes frozen into another act merely by reenactment of that provision, so that that administrative interpretation cannot be changed prospectively through exercise of appropriate rule-making powers.").

The cases cited by the NAB to the contrary are inapposite as they discuss statutory references to *other specific statutory provisions*.[18] Indeed, if the Congress had intended to freeze in place a given administrative interpretation, it could have simply added a definition of "Grade B intensity" into the definitions section and repeated verbatim whatever interpretation it chose from the agency's regulations or precedent. Instead, Congress chose the phrase "as defined by the Federal Communications Commission." The only possible reason for that choice was to defer to the expertise of the agency as a living body with the power and flexibility to review and revise its rules. As the Supreme Court's *Lukhard* decision confirms, when Congress chooses to reference an agency's interpretation in a statute, it does so precisely because it does not want a definition set in stone, but rather wishes to marshal the agency's power to review and revise its interpretation and adapt it as circumstances warrant.

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[18] *See Hassett v. Welch*, 303 U.S. 303, 314 (1938) ("*Where one statute* adopts the particular provision *of another* by a specific and descriptive reference to *the statute or provisions* adopted . . . [s]uch adoption takes *the statute* as it exists at the time of adoption. . . . ") (emphasis added); *Bexar County Criminal District Attorney's Office v. Mayo*, 773 S.W.2d 642, 643-44 (Tx. Ct. App. 1989) ("Where *one statute incorporates another* by reference, and the one incorporated is thereafter amended or repealed, the scope of the incorporating statute remains intact.") (emphasis supplied).

Moreover, the legislative history of the SHVA conclusively proves that Congress intended to track the Commission's definition as it changes from time to time. The House Report explains that the term "Grade B intensity" is used "as defined by the FCC, *currently* in 47 C.F.R. section 73.683(a)."[19] The House Report's formulation clearly means that the then existing definition of § 73.683 was only the then current embodiment of the Commission's definition, and that the statute incorporates the definition as it changes, not that current embodiment. Another equally important reason why the statute cannot be read as referencing something frozen in time is that there is no applicable model for predicting Grade B intensity in place and available to be "frozen." As will be explained in more detail below, the SHVA's "unserved households" definition incorporates a measure of actual intensity from the Commission's rules;[20] it does not incorporate the signal strength contours developed by the Commission for predicting that intensity for other purposes nor does it reference any measurement rules.

Thus, the Commission may redefine "Grade B" intensity for SHVA purposes and, therefore, it also has the power to develop a model for predicting it and rules for measuring it. This Petition focuses on developing a SHVA-appropriate predictive model and measurement method, because none exists today.

At the same time, the Commission should consider a redefinition of the numerical standard for "Grade B intensity" for SHVA purposes to protect the right of every U.S. consumer

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[19] H. Rep. No. 100-887 Part 1, at 26 (1988) (emphasis added); *see also* H. Rep. No. 100-887 Part 2, at 25 (1988).

[20] Of course, as explained above, this measure may itself be revised from time to time by the Commission.

to receive high-quality network service. At a minimum, the redefinition of "Grade B intensity" should take into account multipath interference and ensure that no consumers have to tolerate "ghosting" before they qualify for distant service. While multipath interference and the attendant ghosting may have been generally acceptable to the consumer at the time when "Grade B intensity" was first defined in the 1950s, significant ghosting is not acceptable to the consumer today, and the definition of the term should therefore no longer ignore these factors. Nevertheless, EchoStar recognizes that the redefinition of "Grade B intensity" for SHVA or any other purposes may require careful, fully informed and elaborate analysis. While the Commission should undertake that analysis, EchoStar requests that the Commission proceed expeditiously with the other issues covered by this Petition – the development of a predictive method and establishment of measurement rules.

B. "Grade B Intensity" Measures the Actual Intensity of the Signal, But There Is No Applicable Method for Predicting or Measuring That Intensity For SHVA Purposes

The Commission's definition of Grade B intensity referenced in the SHVA is a measure of the *actual* intensity of over-the-air signals, defined in decibels (dB) above a field intensity of one microvolt per meter (dBu).[21] While EchoStar believes it is appropriate, and indeed necessary, for the Commission to *develop* rules for predicting *and measuring* which households can receive a signal of Grade B intensity, the SHVA defines "unserved household" by reference to actual signal intensity and not by reference to the Commission's methodologies for predicting and measuring that intensity. These methodologies were established for entirely different purposes and are specifically limited in application to those limited purposes.

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[21] 47 C.F.R. § 76.683(a).

This point is evidenced, first, by the statutory text. The definition of "unserved household" uses the term "Grade B intensity."[22] Indeed, there appears to be no dispute that households lying within the Commission's Grade B predictive contour qualify as "unserved" if they cannot receive a Grade B intensity signal and the other components of the definition are also present. This fact should confirm beyond doubt that the "unserved household" definition stops deliberately short of using the Commission's predictive "Grade B contour" model and does not incorporate that model.[23]

Nor does the SHVA specify any particular methodology for measuring signal strength. While the SHVA itself discusses the ability to receive "a over-the-air signal of Grade B intensity (as defined by the Federal Communications Commission)," it is silent as to how best to *measure* Grade B intensity. The legislative history suggests even more strongly that Congress intended to leave the development of a measuring methodology to the Commission. While the House Report specifically references the FCC's then-current definition of Grade B Intensity ("as

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22 *See* 17 U.S.C. 119(d)(8) (expired) (sunset provision in Pub. L. 103-369 §6(c)).

23 Further proof that the "unserved household" definition does not incorporate the Commission's then existing method for predicting intensity can be found in the legislative hearings for the Act. The sponsors of the SHVA legislation had garnered evidence of the problems that would be associated with use of the Commission's Grade B predictive contours – specifically the fact that many households inside the predictive contour cannot receive a signal of Grade B intensity. Again, there does not appear to be any dispute that under the SHVA scheme, such households are "unserved" even though they lie inside the Commission's predictive contour. *See Satellite Home Viewer Copyright Act Before the House Subcom. on Courts, Civil Liberties, and the Admin. of Justice of the Committee on the Judiciary*, 100th Cong. 282, 296 (1988).

defined by the FCC, currently in 47 C.F.R. section 73.683(a)"), it makes no such reference to 47 C.F.R. § 73.686, which governs field strength measurements.[24]

Second, as mentioned above, the Commission's Rules specifically limit the use of Grade B predictive contours and, by implication, the use of the current field-strength measurement methodology to restrictively enumerated situations – coverage, multiple ownership, and principal community signal strength – none of which implicate the SHVA.[25] The pertinent language – "[field strength contours] will be considered for the following purposes ***only***" – suggests that, consistent with the meaning of the SHVA analyzed above, the Commission does not view its special purpose predictive contour model as applicable for SHVA purposes.

Indeed, the North Carolina District court recently agreed with the Commission. It correctly decided that the SHVA definition incorporates only the actual intensity numbers, and

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[24] H. Rep. No. 100-887 Part 1, at 26 (1988); *see also* H. Rep. No. 100-887 Part 2, at 25 (1988). Note that Congress's delegation of authority to the Commission is entirely consistent with the *Lukhard* line of cases, discussed *supra*.

[25] 47 C.F.R. § 73.683(c) provides that:

> The field strength contours will be considered for the following purposes only:
>
> (1) In the estimation of coverage resulting from the selection of a particular transmitter site by an applicant for a TV station.
>
> (2) In connection with problems arising out of application of §73.3555 [the multiple ownership rules].
>
> (3) In determining compliance with §73.685(a) concerning the minimum field strength to be provided over the principal community to be served.

not the Commission's predictive "field strength contour" methodology set forth in 47 C.F.R. § 683 *et seq.*:

> Although *Section 73.683(a) concededly was drafted with other purposes in mind*, Congress can clearly adopt by reference, *in whole or in part*, any portion of the Code of Federal Regulations which it considers relevant to defining a new statutory term. It is apparent that Congress has done so here. SHVA's reference to "an over-the-air signal of Grade B intensity (as defined by the Federal Communications Commission)" most naturally refers to the dBu's required for a signal of Grade B strength for each particular channel.

North Carolina Order at 12 (emphasis added).

In stark contrast, the Florida Court's opinion explicitly references Grade B intensity in terms of the results of the Longley-Rice predictive model.[26] Ironically, the Florida Court's preliminary injunction confirms the existence of a gap that the Commission must fill: no one court is suggesting that the Commission's Grade B contour model has been applied by the Commission for SHVA purposes, and the Florida court has accepted *another* predictive methodology that the Commission has *not* applied for these purposes either (*see* below).

C. Longley-Rice is Only an Appropriate Predictive Model If It Includes Factors Designed to More Accurately Predict Reality

1. The Commission Has Not Universally Accepted the Use of the Longley-Rice Methodology, and Has Never Considered It In this Case

The Florida District Court referred to the Longley-Rice model as "[providing] the best available information, short of conducting actual field measurements, about the likelihood

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[26] *See PrimeTime 24* Order at 34-35 (enjoining provision of service to "any customer *within an area shown on a Longley-Rice propagation map as receiving a signal of at least grade B intensity*") (emphasis added).

that a specific household can receive a signal of a particular intensity from a particular television station."[27] From this conclusion, the District Court enjoined PrimeTime 24 from retransmitting network programming "to any customer within an area shown on a Longley-Rice propagation map as receiving a signal of at least Grade B intensity. . . ."[28] However, the Commission has never endorsed Longley-Rice in the manner suggested by the networks.

The Commission has accepted use of the methodology in the context of digital television allotments, where (as will be seen) it has applied the methodology in a materially different manner than presented to the Florida Court and on the basis of considerations that do not apply here.[29] At the same time, the Commission emphasized that the DTV Sixth Report and Order "does not modify previous rules relating to analog NTSC service."[30]

Indeed, outside that context, the Commission has not used the Longley-Rice model except on a case-by-case basis because of its complexity and the additional inputs and/or assumptions that have to be agreed upon and supplied. For example, in *Amendments of Parts 73 and 74 of the Commission's Rules to Permit Certain Minor Changes in Broadcast Facilities Without a Construction Permit*,[31] the Commission was asked to clarify its policy on supplemental methods for contour prediction such as Longley-Rice. The Commission stated:

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27 *PrimeTime 24* Order at 23.

28 *Id.* at 35.

29 While, in the DTV allotment context, the Commission also applied the Longley-Rice methodology to analog stations, the Commission did so mainly for the purpose of assessing interference to or from digital stations and determining DTV allotments.

30 *See* OET Bulletin No. 69 Issued by FCC Office of Engineering and Technology at 17 ("OET Bulletin").

31 12 FCC Rcd. 12371 (1997) ("Broadcast Facilities Order").

> Supplemental analyses are inherently more complex than the standard contour prediction method and the underlying assumptions are often open to varying interpretations. Thus, these showings are not routine by nature, are often controversial, and the outcome is not always as the applicant would wish. This uncertainty is inappropriate in a license application, wherein the staff is simply confirming that the facility was built properly.[32]

The Commission further noted:

> Because supplemental showings are both complex and unique to each case, staff analyses require extensive engineering review by propagation experts which places a substantial demand on our finite resources. . . . Therefore . . . supplemental showings have been, and will continue to be, considered only where the applicant shows that the location of the FM contour as predicted by the supplemental method is at least 10% greater than the same contour as predicted by the standard contour prediction method.[33]

With respect to FM stations, the Commission has also stated:

> The staff examined past allotment rulemaking proceedings in which the use of supplemental showings was considered in a rulemaking proceeding, but was unable to find any proceeding in which a supplemental showing was accepted and an allotment created which located the 70 dBu contour beyond the location predicted by the standard contour prediction. *Thus no precedent exists for such usage.* Because FM commercial one-step construction permit applications to upgrade or change channel use the same procedures as allotment rulemakings with respect to the allotment reference coordinates, *no application has been granted where the applicant sought to employ a supplemental showing for the allotment reference coordinates.*[34]

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32 *Id.* at 12403.

33 *Id.*

34 *Id.* at 12402 (emphasis added).

More recently, in *Dennis F. Begley, Esq.*,[35] the Commission refused to allow the selective use of Longley-Rice maps in determining relevant FM radio markets for its multiple ownership rules.[36] In *Channel 39, Inc.*,[37] another 1998 case, the Commission allowed the use of Longley-Rice to determine analog TV markets around Miami only "given the flat terrain involved."

Indeed, several broadcasters only last year urged the Commission to *reject* Longley-Rice, on the grounds that it did not adequately take into account interference from other television stations. In the recent DTV proceeding, certain broadcasters argued that the Los Angeles DTV Longley-Rice map ignored interference to over one million customers.[38]

Thus, the Longley-Rice model is not a predictive model universally accepted for all purposes and certainly cannot be applied for purposes of the "unserved households" restriction unless the Commission considers its appropriateness for those purposes. As explained below, the Longley-Rice model presented to the Florida court is inappropriate for SHVA purposes, both because it does not take account of important morphological obstructions that hamper reception of an adequate intensity signal, and because it is based on unacceptably low probabilities of receiving service.

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35 DA-98-877 (Mass Med. Bureau, rel. May 8, 1998).

36 *Id.*

37 13 FCC Rcd. 3108 (1998).

38 *See* Comments of H&E and KPDX in DTV Reconsideration of Sixth Report at ¶ 179.