verizon

1300 I Street, NW
Suite 500 East
Washington, DC 20005

Daudeline Meme
Vice President & Associate General Counsel
Federal Regulatory & Legal Affairs
202.515.2586
daudeline.meme@verizon.com

June 25, 2021

By Electronic Filing

Paul E. Blais
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

Re: HNS License Sub, LLC
IBFS File Nos. SES-MOD-20201204-01305, SES-MOD-20201204-01306, SES-MOD-20201204-01308, SES-MOD-20201204-01309 & SES-MOD-20201204-01310
Call Signs: E170163, E170164, E170153, E170165 & E170169

Dear Mr. Blais:

HNS License Sub, LLC ("Hughes") seeks authorization to modify its Fixed Satellite Service gateway earth stations in Cheyenne, Wyoming, Bismarck, North Dakota, Lindon, Utah, Simi Valley, California, and Quincy, Washington.[1] Because these earth stations communicate with Hughes' geostationary orbit satellite in the 27.5-28.35 GHz band, Hughes must coordinate with Upper Microwave Flexible Use Service ("UMFUS") licensees and demonstrate that its gateway earth stations comply with Section 25.136 of the Commission's rules.[2]

[1] *See* HNS License Sub, LLC, Application to Modify Cheyenne Jupiter 3 Gateway, File No. SES-MOD-20201204-01306 (filed Dec. 4, 2020) ("Cheyenne Application"); HNS License Sub, LLC, Application to Modify Bismarck Jupiter 3 Gateway, File No. SES-MOD-20201204-01310 (filed Dec. 4, 2020) ("Bismarck Application"); HNS License Sub, LLC, Application to Modify Lindon Jupiter 3 Gateway, File No. SES-MOD-20201204-01309 (filed Dec. 4, 2020) ("Lindon Application"); HNS License Sub, LLC, Application to Modify Simi Valley Jupiter 3 Gateway, File No. SES-MOD-20201204-01305 (filed Dec. 4, 2020) ("Simi Valley Application"); HNS License Sub, LLC, Application to Modify Quincy Jupiter 3 Gateway, File No. SES-MOD-20201204-01308 (filed Dec. 4, 2020) ("Quincy Application"). Verizon submitted petitions in response to Hughes' Bismarck and Lindon Applications, and comments regarding Hughes' Quincy Application.

[2] *See* 47 C.F.R. § 25.136.

In its Applications, Hughes uses clear sky EIRP levels to calculate the power flux density contours of its earth stations for purposes of Section 25.136(a)(4)(ii).[3] However, in its recent guidance on siting methodologies for earth stations operating in bands shared with UMFUS, the International Bureau states that "[d]emonstrations should take into account worst case input power density and not just input power density during clear sky conditions."[4] This requirement is important because taking into account worst-case input power density ensures that UMFUS providers can more accurately predict areas of possible interference. It also allows the Commission and interested parties to assess whether an earth station's operations will ever "infringe" on areas where the Commission "could expect to have high demand for wireless services,"[5] including "roads, railroads … ports, major event venues, homes and offices."[6]

Hughes claims that it is appropriate to use clear sky conditions because its operations "will significantly exceed clear sky power levels" only a small percentage of the time.[7] For its 28 GHz applications, Hughes cites 96.42% to 98.71% as adequate percentages to justify ignoring those times when its transmitters will use additional power to overcome weather based fading. But Verizon's terrestrial UMFUS base stations typically strive for 99.999% reliability, or less than 6 minutes of down time per year. This high standard of reliability is necessary for Verizon to offer its Ultra Wideband services and to provide the low latency needed to support the intensive consumer demands for 5G operations. The "fairly high probabilities of clear sky conditions at each site,"[8] that Hughes cites are between 1.289% and 3.579% short of Verizon's target availabilities, and are thus insufficient to protect Verizon's UMFUS base station installations. And even momentary interference could significantly disrupt Verizon's 5G operations—affecting navigation or interrupting emergency communications. Accordingly, it is critical for Verizon to have accurate information regarding the operating parameters of Hughes' earth stations, including the additional power required to cover weather based fading events.

This information is particularly critical where, as here, an earth station's operations may no longer meet the criteria in Section 25.136 when using additional power to cover fading margin conditions. For example, based on the information Hughes submitted in its Application, the Cheyenne earth station will likely cross an interstate or principal arterial under worst-case conditions. While Hughes claims "the earth station is licensed for clear sky EIRP levels pursuant

---

[3] *See* Cheyenne Application, Attach. B at 1-2; Bismarck Application, Attach. B at 1-2; Lindon Application, Attach. B at 1-2; Quincy Application, Attach. B at 1-2; Simi Valley Application, Attach. B at 1-2.

[4] Public Notice, *International Bureau Issues Guidance on Siting Methodologies for Earth Stations Seeking to Operate in the 24.75-25.25 GHz, 27.5-28.35 GHz, 37.5-40 GHz, 47.2-48.2 GHz, and 50.4-51.4 GHz Frequency Bands to Demonstrate Compliance with Section 25.136*, 35 FCC Rcd 6347 at 3 (2020).

[5] Report and Order and Further Notice of Proposed Rulemaking, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 31 FCC Rcd 8014, ¶ 54 (2016) ("*Spectrum Frontiers First R&O*").

[6] Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, 32 FCC Rcd 10988, ¶ 130 (2017).

[7] Letter from Jennifer A. Manner, Senior Vice President, Regulatory Affairs, Hughes, to Paul Blais, FCC, IBFS File Nos. SES-MOD20201204-01305 *et al*. at 2 (Mar. 29, 2021).

[8] *Id.*

to Section 25.204(e) of the Commission's rules,"[9] that Section states only that transmitting earth stations may exceed authorized levels during periods of rain fade. It does not authorize Hughes to rely on clear sky conditions, contrary to the Bureau's guidance.

Indeed, the Bureau's guidance aimed to provide "best practices for earth station siting *to minimize the impact on UMFUS services*,"[10] consistent with the Commission's intent to "provide predictability to terrestrial licensees"[11] and thereby "create a regulatory scheme that will suit the development of innovative wireless services for years to come."[12] Taking into account worst-case input power density ensures minimal interference to Verizon's 5G network and will provide Verizon the added regulatory certainty that the Commission sought to provide UMFUS licensees in the *Spectrum Frontiers Orders*.

For these reasons, the Commission should require Hughes to supplement its Applications with a computation of the earth stations' contours that accounts for worst-case input power density.

Sincerely,

/s/ *Daudeline Meme*

Daudeline Meme

[9] Cheyenne Application, Attach. B at 2; Bismarck Application, Attach. B at 2; Lindon Application, Attach. B at 2; Quincy Application, Attach. B at 2; Simi Valley Application, Attach. B at 2.

[10] *Spectrum Frontiers First R&O* ¶ 54 & n.120 (emphasis added).

[11] *Id.* ¶ 60.

[12] *Id.* ¶ 36.