Federal Communications Commission
Washington, D.C. 20554

June 3, 2020

Mr. William M. Wiltshire
Harris, Wiltshire & Grannis LLP
1919 M Street, NW
Suite 800
Washington, D.C. 20036

Re: IBFS File No. SAT-MOD-20200417-00037; Call Signs: S2983 and S3018

Dear Mr. Wiltshire:

Thank you for your prompt response to the Satellite Division's letter regarding the above-captioned application. To assist in the Satellite Division's review of Space Exploration Holdings, LLC (SpaceX) application, please provide the information requested below.[1]

1. Table 1 of the response specifies that the collision risks for a spacecraft with no propulsion capability at 560 km is larger than at the 570 km altitude.[2] Please indicate whether these two rows were accidentally inverted.

2. Concerning the data provided in Table 1, please indicate what method was used to calculate the cross-sectional area of the spacecraft, one of the two methods described in NASA-STD-8719.14b or some other method. If other methods were employed, please provide a description. What type of modeling was used in calculating the orbital lifetime of the spacecraft and what assumptions were included? Where were the debris flux numbers obtained? Were they extracted from the NASA ORDEM software or from some other source?

3. Please provide additional information regarding the SpaceX software used to develop the collision risk figures: What is the frequency of collision calculations? How many times per year are the altitude and the debris flux levels at that altitude recalculated? Are the debris flux numbers obtained at average altitudes for each length of time or are they based at particular times during the calculated timeframe, such as the beginning, end or mid-point of the timeframe? Please also provide a basic template for the collision risk calculations for a single time unit and indicate the time unit. For example, using ORDEM fluxes, a potential template would be: Collisions_segN = (DebrisFlux_segN) * (Cross-sectional Area) * (Years spent in segN); CollisionSum = Collisions_seg1 + Collisions_seg2 + Collisions_seg3 + …; CollisionProbability = 1 – e^(-CollisionSum)

[1] 47 CFR § 25.111(a).

[2] *See* Letter from William M. Wiltshire, Counsel to SpaceX, to Jose P. Albuquerque, Chief, Satellite Division, IBFS File No. SAT-MOD-20200417-00037, at 2, Table 1 (dated May 6, 2020).

4. Please indicate whether the autonomous collision avoidance process is utilized during all phases of spacecraft operations, or whether some phases do not utilize it. If any phases of flight do not currently utilize this system, please indicate whether autonomous operations are under development for those phases, and the methods currently used to manage collision avoidance processes.

The requested information must be submitted no later than **July 6, 2020**. Failure to do so may result in the dismissal of SpaceX's application pursuant to Section 25.112(c) of the Commission's rules.[3]

Sincerely,

/s/ Jose P. Albuquerque

Jose P. Albuquerque
Chief, Satellite Division
International Bureau

[3] *See* 47 C.F.R. § 25.112(c).