



Federal Communications Commission
Washington, D.C. 20554

June 29, 2015

David Wilson
Spectrum Five LLC
1776 K Street, NW, Suite 200
Washington D.C. 20006

Re: Spectrum Five LLC
IBFS File No.: SAT-LOI-20150416-00025
Call Sign: S2940

Dear Mr. Wilson:

This letter requests additional information regarding Spectrum Five's above captioned Letter of Intent to provide service to the United States using a 17/24 GHz broadcasting-satellite service (BSS) space station authorized by the Netherlands, to be known as BSSNET2A-111W, from the 110.9° W.L. orbital location. To assist the Satellite Division with the processing of this application, we request, pursuant to Section 25.111(a) of the Commission's rules, that Spectrum Five provide the following information, explanations, and clarifications:

1. Section 25.114(c)(4)(ii) of the Commission's rules requires applicants to specify the maximum EIRP and maximum EIRP density for each space station transmitting antenna beam. Spectrum Five has provided maximum EIRP values for transmitting beams CONL and CONR in Table S7(m) of Schedule S, but no maximum EIRP density values for these beams. Please provide maximum EIRP density values for both of these beams.¹
2. Section 25.114(c)(4)(v) of the Commission's rules requires applicants to specify both the minimum and maximum saturation flux density at beam peak for each space station receiving beam (other than command beams). Although Spectrum Five's application has provided the minimum saturation flux density values in Table S7(p) of Schedule S, we do not find a maximum value. Please provide this information.
3. Section 25.114(d)(18) of the Commission's rules requires applicants for 17/24 GHz BSS space stations to specify a maximum orbital eccentricity value. Spectrum Five did not include this information in its current application. Please provide this information.
4. In its application and in Table S3(a) of Schedule S, Spectrum Five indicates that it will operate at the 110.9° W.L. orbital location. However, in Table S8(d) of Schedule S, Spectrum Five provides an orbital longitude of 115° W.L. Please confirm that 110.9° W.L. is the intended orbital location.

¹ In the PFD discussion found in Section 7.2 of the technical narrative, Spectrum Five includes a row labeled "Density." The entry for 0 degrees elevation angle and peak EIRP of 60.2 dBW is -117.3 dBW/m²/MHz. This value, however, is given for a single downlink beam named "US CONU+", which does not correspond to either of the downlink beams named in Table S7 of Schedule S. Moreover, as there are two downlink beams provided in Schedule S, there should be two maximum EIRP density values provided, even if they are the same for each beam.

5. Please explain what is meant by Spectrum Five's statement that "all TWTAs will be outgassed prior to post-mission disposal."²

6. Please clarify the basis for the conclusion that no operational systems would operate within +/- 0.05 degrees of 110.9° W.L., particularly when the 0.05 degree stationkeeping excursions for the BSSNET2A-111W and space stations located at 111.0° W.L. are taken into consideration.³ If these conclusions are based on contact with other operators or publicly available data, please specify the basis for the conclusions.

7. Please confirm that Spectrum Five will provide a contact point for receiving Joint Space Operations Center (JSPOC) conjunction notifications, and describe any further measures Spectrum Five will take with respect to collision avoidance procedures.

8. Spectrum Five states that it has not yet settled upon exact specifications for the physical characteristics of the satellite.⁴ Accordingly, please confirm that, when these parameters are finalized, Spectrum Five "will" assess fuel gauging uncertainty and ensure that the budgeted propellant, taking into account such uncertainty, provides an adequate margin of fuel reserve so that the disposal orbit will be achieved.⁵

9. Please clarify the arrangements for telemetry, tracking, and command (TT&C) operations. Spectrum Five states that it is required to perform TT&C operations from a control center in the Netherlands Antilles.⁶ Spectrum Five also states that "command signals from the TT&C control center are received via a dual antenna system: (1) a narrow beam antenna located in the Southwest US for GSO operations..."⁷ Spectrum Five includes a link budget that refers to a "space station to LA" TT&C center.⁸ Please clarify how TT&C operations will be conducted, specifying the location of TT&C antennas and control center.

10. Please clarify Spectrum Five's statements regarding compliance with the foreign licensing requirements in Section 25.137 of the Commission's rules. 47 C.F.R. § 25.137. Spectrum Five states that the Netherlands and the Netherland Antilles have granted it the right to use 17/24 GHz BSS frequencies at the 110.9° W.L. orbital location pursuant to a 2007 agreement between the State of the Netherlands, the Government of the Netherland Antilles, and Spectrum Five.⁹ According to Spectrum Five, the agreement also states that the Netherland Antilles will provide

² Spectrum Five LLC, IBFS File No. SAT-LOI-20150416-00025 (Spectrum Five Application), Exhibit A at 21.

³ *Id.* at 22.

⁴ *Id.* at 15, 16.

⁵ *Id.* at 24.

⁶ *Id.*, Narrative at 5.

⁷ *Id.*, Exhibit A at 9.


⁸ *Id.* at 32.

⁹ *Id.*, Narrative at 4.

licenses for Spectrum Five's telemetry, tracking, and command operations. Spectrum Five further states that in 2006 it satisfied the Commission's ECO-Sat test using the Netherlands and Netherland Antilles as the relevant markets, and that "there have been no changes in relevant Netherlands law or policy since the agency's ECO-Sat finding."¹⁰ We note, however, that the Netherlands Antilles was dissolved in 2010 and that the constituent islands now have different governments and status with the Netherlands. As a result, we are not able to determine whether Spectrum Five has satisfied the Commission's ECO-Sat test or Spectrum Five's rights and obligations regarding space station operations at the 110.9° W.L. orbital location. Please provide any updated information regarding Spectrum Five's rights to use the 17/24 GHz frequencies at the 110.9° W.L. orbital location and licensing for its TT&C operations.

The information, clarifications, and explanations requested above must be submitted by July 29, 2015. Failure to do so may result in the dismissal of Spectrum Five's application pursuant to Section 25.112(c) of the Commission's rules, 47 C.F.R. § 25.112(c).

Sincerely,


Jose P. Albuquerque
Chief, Satellite Division
International Bureau

¹⁰ *Id.* at 7.