From: Daniel Smith

To: Doug Young
Date: January 07, 2022

Subject: Request for Info - File # 0734-EX-CN-2021

Message:

Exhibit A ODAR GNOMES-3_Rev 2.0 has been updated to the OET Experimental Licensing Systems to address the following comments:
Comment: Please provide the stationkeeping tolerances of the spacecraft, both altitude and inclination +/-.
Reference ODAR 2.0, page 6.

Note: For the Tranporter-4 mission, SpaceX recently confirmed they will deploy some satellites at approximately 650km, including GNOMES-3, and then deploy the remaining satellites around 525km.] The deploy orbit will be the operational orbit for the full three years. This ODAR will use 650km for all scenarios and analysis below:

Comment: Please redo the large object collision risk calculations using the correct durations for the 650 km case where postmission disposal fails. The duration should be 3 years with stationkeeping turned on. Setting the duration to 25 years with no stationkeeping ignores the 3 years of the operational mission. Additionally, please recheck the start times associated with your calculations. For everything except the initial 1.5 year checkout phase at 525 km, the start time should be at least 1.5 years greater than the initial deployment of the satellite. This will affect the total orbital lifetime of the spacecraft and this number will need to be updated and provided, as well. Depending on the new orbital lifetime numbers, please provide the probability of postmission disposal failure due to impacts with small objects.
Reference ODAR 2.0, section 9, pgs. 18-21

Comment: NTIA data form appears to lack any specifics about the transmissions themselves: power, bandwidth, etc. Also, it only shows the X-Band downlink, not the S-Band uplink. We are unable to cross-validate the spacecap file with the GIMS file.
Reference updated Exhibit B NTIA GNOMES_3 Rev A added to the OET Experimental Licensing Systems

Comment: The spacecap runs through the first step of validation, but it will not allow us to even select a file for cross-validation. Please confirm the orbit altitude parameters: Their operational altitude is 650 x 650 km, 98 inclination. They'll be deployed somewhere between 500-600 km and perform checkout for 1.5 years before transitioning to the higher orbit, however. In the orbital information section, they state: Apogee - 650 Perigee - 500 Min Altitude - 500 Also, they set all the exponents to 3 which may be incorrect.
Reference: The updated SpaceCap file is in work and will be upload in the next few days.