

To: Jennifer Manner
E-Mail: jennifer.manner@echostar.com
From: Nimesh Sangani
Date: December 07, 2020

Subject: Additional Information Request

Message:

Please address the following questions and concerns.

Please confirm, or provide corrections, on the below information as an accurate description of the solar arrays to be used on the satellites and the method in which they were modeled for survivability in the Debris Analysis Program (DAS):

The solar arrays being employed on the spacecraft are primarily a combination of Aluminum, PCB (fiberglass) and a small amount of carbon fiber. In order to provide a worst-case survivability number, the solar arrays were modeled as 100% pieces of carbon fiber, which resulted in larger surviving kinetic energy than will actually occur.

In reality, the solar arrays are mostly Aluminum and fiberglass, both of which are not expected to survive reentry. The smaller amounts of carbon fiber may or may not survive reentry, but in the event they do survive, are not expected to pose a substantive casualty risk.

If available, please provide a material makeup (by percentage) of the primary materials of the solar arrays, as well as the amount of carbon fiber utilized.

Additionally, please provide the thickness of the layer of carbon fiber being utilized on the solar arrays to provide extra stiffness to the components.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of December 07, 2020 may result in application dismissal pursuant to Section 5.67 and forfeiture of the filing fee pursuant to Section 1.1108.

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