

From: Paul Anderson

To: Gulmira Mustapaeva

Date: July 13, 2026

Subject: Request for Info - File # 0864-EX-ST-2026

Message:

Please perform the small object penetration test while accounting for all critical surfaces. Response: The probability of PMD failure from small object penetration is computed by NASA DAS to be $1.59e-7$ (compliant), where the critical surface probability of penetration is $4.65e-8$ for the flight computer/radio assembly, $5.23e-8$ for the battery pack, and $6.07e-8$ for the deorbit device. Please provide the probability of large object collision for the duration that the drag sail will be deployed. Response: The probability of large object collision for the duration that the drag sail will be deployed is computed by NASA DAS to be $2.02e-7$ (compliant). In the SpaceCap file for the URX beam in 399.9 - 400.05 MHz, cell C4a (Class of station) specifies "ED". The Preface To The BR International Frequency Information Circular specifies that ED means "Space telecommand space station". The Table of Frequency Allocations does not have an allocation in 399.9 - 400.05 MHz for "Space telecommand space station" for . Please select a new class of station, and if necessary mark the cell C2c (RR No. 4.4) with a "Yes". Response: We have submitted updated ITU documentation to the application file to reflect a change to a 4.4 designation. Please provide the FCC filing numbers for the associated US Earth station filings. Response: The FCC filing numbers for the associated US Earth Stations owned and operated by RBC Signals are: (1) Deadhorse, Alaska, FCC File No. SES-LIC-20220509-00467, Call Sign E220056; (2) Winston-Salem, North Carolina, for which the RBC Signals FCC application for the Earth Station is pending at this time, with expected Call Sign assignment by the FCC in August 2026. Please provide the reliability showing for the satellite required under 47 CFR 5.64(b)(7)(iv)(A). Response: Blackwing Space submits that Baby Bird satisfies the post-mission disposal reliability showing required by 47 CFR 5.64(b)(7)(iv)(A). Baby Bird is a non-propulsive 1.5U CubeSat with a planned six-month mission in a 510 km circular Sun-synchronous orbit at 98 degrees inclination. At end of mission, the spacecraft will execute a ground-commanded deorbit and passivation sequence in which a retained passive deorbit device deploys an attached drag sail, increasing the average spacecraft area-to-mass ratio from $0.0061 \text{ m}^2/\text{kg}$ to $0.0842 \text{ m}^2/\text{kg}$. As reflected in the ODAR, this post-mission configuration results in predicted uncontrolled reentry in approximately 0.53 years, or about 6 to 7 months, well within the applicable five-year limit. The disposal system uses redundant release features, remains passive after deployment, and provides substantial performance margin, with a nominal deployed drag area of 0.325 m^2 against a 0.1 m^2 design requirement. Under worst-case furling, the effective area remains approximately 0.11 m^2 , above the minimum design requirement. In addition, repeated actuation and full sail deployment have been demonstrated in qualification testing for the device, including over 10 laboratory trials with gravity-compensated deployment and worst-case minimum-voltage conditions, demonstrating 100% successful deployment. Based on these redundant design features, repeated deployment performance, and substantial margin to the five-year limit, Blackwing Space shows that the selected post-mission disposal method is capable of achieving a PMD probability of success of at least 0.9 for this NGSO space station.