**April 16, 2021**

To:Chris Baker/XP10  
Kathryn Connors/MOOG  
Tom Kowalewski/MOOG

From: Anthony DeStefano/EV44

Subject: Proposed Update to SLS Booster Radiation Environment

Please find enclosed the updated LET integral flux, and the differential and integral particle fluxes for the 50 km altitude environment. This update was conducted following similar procedures to the derivation of the 200 km environment in SLS-SPEC-159 Cross-Program Design Specification for Natural Environments (DSNE). A comparison was made between the updated 50 km environment with the 200 km environment as shown in DSNE Section 3.2.13. In general, both the solar particle event (SPE) and galactic cosmic ray (GCR) integral fluxes were reduced in the lower altitude environment. A factor of 25x reduction was seen in the overall SPE integral fluxes while a reduction of 3.7x was seen in the GCR fluxes. In both the SPE and GCR differential flux spectra, the flux peak shifted from 1.7E3 MeV to 5.1E3 MeV. Reduction in the LET spectra was also seen. At 1 LET (MeV-cm2/mg), the SPE LET flux was reduced by a factor of 22x and the GCR LET flux was reduced by a factor of 3.7x. For larger LET values, even further reduction is seen in both the SPE and GCR radiation components.

Please contact the undersigned with any questions.

Anthony DeStefano

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Enclosure

cc:

EV44/Nathan Curtis

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EV44/Emily Willis