Project

End of Mission Plan

Initial Release

PREPARED BY:

Orbital Debris Specialist	Date
Project System Engineering Team	Date

APPROVED BY:

Project System Engineer	Date
Mission Assurance Manager	Date
Mission Systems Manager	Date
Project Manager	Date

Project
End of Mission Plan
Prepared for Launch
Revision A

APPROVED BY:

_____ _____
Program Executive Date
NASA Science Mission Directorate

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Director, Earth Science Division _____
NASA Science Mission Directorate Date

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Associate Administrator _____
NASA Science Mission Directorate Date

CONCURRED BY:

_____ _____
Meteoroid/Orbital Debris Program Executive Date
NASA Office of Safety and Mission Assurance

_____ _____
Chief, Date

NASA Office of Safety and Mission Assurance

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Pre-launch EOMP Evaluation: Mission Self-Assessment ("Check Sheet")

Reqm't #	Spacecraft			Comments
	Compliant or N/A	Not Compliant	Incomplete	
4.3-1.a Released Debris <25 Yr lifetime	☒	☐	☐	No objects are released from the spacecraft.
4.3-1.b Released Debris < 100 Object-Yr lifetime	☒	☐	☐	No objects are released from the spacecraft.
4.3-2 Limit Released Debris in GEO	☒	☐	☐	Requirement is not applicable.
4.4-1 Limit Risk from Accidental Explosions During the Mission	☒	☐	☐	For the spacecraft, quantitative analysis of many scenarios shows acceptable risk; other semi-quantitative or conservative bounding analyses suggest acceptably low risk.

Reqm't #	Spacecraft			Comments
	Compliant or N/A	Not Compliant	Incomplete	
4.4-2 Design in Passivation, to limit Accidental Post Mission Explosions	☐	☒	☐	**Stored pressurant, which will remain on-board after End of Mission (EOM), is not sufficient to cause spacecraft break-up, i.e. is deemed to be at safe level. A waiver to forgo pressurant venting has been approved; it details design changes made to ensure that the pressurant has a very low probability of causing break-up.** **The gas-filled IMU, which will not be vented after EOM, does not hold sufficient energy to cause spacecraft breakup, i.e. is deemed to be at safe level.** **Reaction wheels and Spun Instrument Assembly will be disabled at EOM.** **Spacecraft propellant is depleted by a maneuver to a lower-altitude orbit, and by subsequent attitude control maneuvers.** **The solar array will not be electrically disconnected from the power subsystem at EOM. However, low charge state of battery, and cell safety features, will preclude the generation of debris by explosion.**
	pressurant vent waiver approved			
4.4-3 Limit Long-term Risk from Planned Breakup	☒	☐	☐	**No on-orbit breakups of spacecraft are planned.**
4.4-4 Limit Short-term Risk from Planned Breakup	☒	☐	☐	**No on-orbit breakups of spacecraft are planned.**

Reqm't #	Spacecraft			Comments
	Compliant or N/A	Not Compliant	Incomplete	
4.5-1 Large Debris Collision Probability < .001	☒	☐	☐	**Compliance of spacecraft depends on disposal orbit perigee, which determines orbit lifetime, which determines exposure to debris.** **The Project plans for a disposal maneuver to lower perigee, to achieve compliance with the large-debris collision requirement.**
4.5-2 Small MMOD Collision Prob < .01	☒	☐	☐	**Spacecraft is in compliance, with an estimated 99% probability of surviving MMOD to execute disposal.**
4.6-1(a) Reenter Within 25 Yrs	☒	☐	☐	**Mission plan for the disposal orbit is designed such that the spacecraft orbit decay lifetime will be considerably less than 25 years.**
4.6-1(b) Move to a Storage Orbit Below GEO	☒	☐	☐	**Requirement is not applicable.**
4.6-1(c) Direct Retrieval	☒	☐	☐	**Requirement is not applicable.**
4.6-2 Move to a Storage Orbit above GEO	☒	☐	☐	**Requirement is not applicable.**
4.6-3 Move to a Storage Orbit between LEO & GEO	☒	☐	☐	**Requirement is not applicable.**

Reqm't #	Spacecraft			Comments
	Compliant or N/A	Not Compliant	Incomplete	
4.6-4 Reliability of Post Mission Disposal maneuver >0.90	☒	☐	☐	**Analysis shows that the spacecraft is in compliance (at 90% reliability).**
4.7-1 Casualty Probability <1/10,000	☒	☐	☐	**The spacecraft human casualty risk is estimated to be 1:10,000. This is derived from a Debris Casualty Area (DCA) of 8.4 m^2, and requires reentry by 2029.**
4.8-1 tethers	☒	☐	☐	**Requirement is not applicable; No tethers are used.**