

Project

End of Mission Plan

Initial Release

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Project
End of Mission Plan
Prepared for Launch
Revision A

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EXAMPLE

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 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | No objects are released from the spacecraft. |
| 4.3-1.b Released Debris < 100 Object-Yr lifetime | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | No objects are released from the spacecraft. |
| 4.3-2 Limit Released Debris in GEO | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Requirement is not applicable. |
| 4.4-1 Limit Risk from Accidental Explosions During the Mission | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 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 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>pressurant vent waiver approved</p> <p>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.</p> <p>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.</p> <p>Reaction wheels and Spun Instrument Assembly will be disabled at EOM.</p> <p>Spacecraft propellant is depleted by a maneuver to a lower-altitude orbit, and by subsequent attitude control maneuvers.</p> <p>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.</p> |
| 4.4-3 Limit Long-term Risk from Planned Breakup | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | No on-orbit breakups of spacecraft are planned. |
| 4.4-4 Limit Short-term Risk from Planned Breakup | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 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 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>Compliance of spacecraft depends on disposal orbit perigee, which determines orbit lifetime, which determines exposure to debris.</p> <p>The Project plans for a disposal maneuver to lower perigee, to achieve compliance with the large-debris collision requirement.</p> |
| 4.5-2 Small MMOD Collision Prob < .01 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Spacecraft is in compliance, with an estimated 99% probability of surviving MMOD to execute disposal. |
| 4.6-1(a) Reenter Within 25 Yrs | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 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 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Requirement is not applicable. |
| 4.6-1(c) Direct Retrieval | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Requirement is not applicable. |
| 4.6-2 Move to a Storage Orbit above GEO | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Requirement is not applicable. |
| 4.6-3 Move to a Storage Orbit between LEO & GEO | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 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 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Analysis shows that the spacecraft is in compliance (at 90% reliability). |
| 4.7-1 Casualty Probability <1/10,000 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 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 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Requirement is not applicable; No tethers are used. |