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| **NASA Expendable Launch Vehicle (ELV)**  **Payload Safety Hazard Report**  (NPR 8715.7 and NASA-STD 8719.24) | | 1. HAZARD REPORT #:  **PROP-08-MPS**  2. INITIATION DATE:  07/25/2014 |

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| 3. MISSION/PAYLOAD PROJECT NAME:  MERV  PAYLOAD SYSTEM SAFETY ENGINEER:  Lucas Layman | | 4. REVIEW PHASE:  ☒ Phase I  ☐ Phase II  ☐ Phase III |

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| 5. SYSTEM/SUBSYSTEM:  Propulsion  Structure  Propellants | 6. HAZARD GROUP(S):  Fire/Explosion  Pressure | 7. DATE:  07/25/2014 |

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| 8. APPLICABLE SAFETY REQUIREMENTS:  NOT YET AVAILABLE | | |

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| **HAZARD** | | |

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| 9. HAZARD TITLE:  Contamination in the MPS Hydrogen System Leads to Malfunction, Damage or Fire/Explosion | | 10. HAZARD CATEGORY AND RISK LIKELIHOOD:  ☐ I - Catastrophic  ☒ II - Critical  ☐ III - Marginal  ☐ IV - Negligible |

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| 11. DESCRIPTION OF HAZARD:  Main propulsion system contamination could affect propellant quality or cause damage to valves, lines, or other internal equipment or cause blockage affecting USE performance. Contamination reaching the USE turbo pumps could cause cavitation or structural failure resulting in an immediate explosion resulting in loss of Vehicle and Life. Contamination could also consist of FOD (which includes process and nonprocess) or internal system failures (metal particles, bolts, etc). Contamination in the pressurization system can marginalize MPS operation, causing it to fail or migrate into the LH2.) | | |

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| 12. HAZARD CAUSES: | | |