

National Aeronautics and Space Administration

Headquarters

Washington, DC 20546-0001



February 07, 2011

Reply to Attn of:

Safety and Assurance Requirements Division

TO: Associate Administrator for Space Operations Mission Directorate

Kennedy Space Center  
Attn: AA/Director

FROM: Chief, Safety and Mission Assurance

SUBJECT: Establishment of Launch Services Program (LSP) Safety and Mission Assurance (SMA) Requirements

*secret & Bob, Your folks did a great job on this...  
Tx*

During the past year, a team from the Kennedy Space Center (KSC) SMA Launch Services Division and my office convened to identify the NASA-level SMA requirements which are applicable to overall LSP activities, LSP launch service contracts, LSP advisory roles, LSP-owned property/facilities, LSP support service contracts, and LSP personnel at non-NASA locations. Applicability was determined at the document, chapter, and requirement levels. The complete results of this effort are contained in the Enclosure.

By this memorandum, per NPR 8715.3, paragraph 1.13, I am specifying the SMA requirements that are applicable to the LSP. Any SMA Technical Authority NPD, NPR, and NASA-STD requirements that are not specified as applicable in the enclosure are hereby determined to be not applicable, and further requirement relief requests are not required. However, when any of the documents listed in the enclosure are modified, the changes will have to be examined to determine applicability to LSP. This activity will be especially important prior to issuing Requests for Proposals or contractual agreements.

Thank you for your support in tracing NASA-level SMA requirements to LSP. Please express my thanks to the KSC SMA Launch Services Division for their superior work. This effort is already serving as a guide for helping other emerging NASA programs to quickly ascertain which SMA requirements are applicable to their program. Dr. John W. Lyver, IV, of my staff, is coordinating the Office of Safety and Mission Assurance support for this effort. He can be reached at (202) 358-1155 or by e-mail at JLyver@NASA.GOV. An electronic copy of all of our analyses will be provided separately.

*Resp/OC*  
Bryan O'Connor

Enclosure

cc:

Associate Administrator/Mr. Scolese

Chief Engineer/Dr. Ryschkewitsch

Chief Health and Medical Officer/Dr. Williams

Office of Safety and Mission Assurance/Dr. Stamatelatos

Dr. Lyver

KSC/Mr. Wetmore

	Document	Rev, Change #, Date	Document Title	1. LSP	2. LSP Launch Service Contracts	3. LSP Advisory Roles	4. LSP Owned Property/Facilities	5. LSP Support Service Contract	6. LSP Personnel @ Non-NASA Locations	Rationale & Notes
1	<a href="#">NPD 8700.1</a>	E 10/28/08	NASA Policy for Safety and Mission Success	Yes Applicable per the note	No	No	No	No	Yes Applicable per the note	1, 6 - Only para. 5.f-5.h & 5.j-5.k apply. 2, 3, 4, 5 - Policy has no direct requirements that must be flowed down.
2	<a href="#">NPD 8700.3</a>	B 10/28/08	Safety and Mission Assurance Policy for NASA Spacecraft, Instruments, and Launch Services	Yes Applicable per the note	No	No	No	No	Yes Applicable per the note	1, 6 - Applicable requirements: 5.c, 5.d, 5.f, & 5.g. 2, 3, 4, 5 - Policy has no direct requirements that must be flowed down.
3	<a href="#">NPD 8710.5</a>	D 3/12/08	Policy for Pressure Vessels and Pressurized Systems	Yes Applicable per the note	No	No	Yes Applicable per the note	No	No	1, 4 - Applicable requirements: 5.b, 5.d, 5.f, & 5.g. 2 - Applies only in NASA owned facilities or launch sites. Policy has no direct requirements that must be flowed down. Pressure vessel and pressurized system requirements are covered in applicable range requirements (e.g., EWR 127-1, AFSPCMAN 91-710, RSM-2002). Contractor must follow local, State, and Federal regulations. 3, 5 - Policy has no direct requirements that must be flowed down. 6 - Non-NASA locations must follow local, State, and Federal regulations, in addition to any safety standards for that specific facility.
4	<a href="#">NPD 8720.1</a> (soon to be NPR 8725.1)	C 4/18/08	NASA Reliability and Maintainability (R&M) Program Policy	Yes Applicable per the note	No	No	Yes Applicable per the note	No	Yes Applicable per the note	1, 4, 6 - Only para. 5.c-5.e apply. 2, 3, 5 - Policy has no direct requirements that must be flowed down.
5	<a href="#">NPD 8730.1</a>	B 8/13/03 revalidate 4/29/04	Metrology and Calibration	Yes Applicable per the note	No	No	Yes Applicable per the note	No	Yes Applicable per the note	1, 4, 6 - Applicable requirements: 1.a-1.d. 2, 3, 5 - Policy has no direct requirements that must be flowed down.
6	<a href="#">NPD 8730.2</a>	C 11/3/08	NASA Parts Policy	Yes Applicable per the note	No	No	Yes Applicable per the note	No	Yes Applicable per the note	1, 4, 6 - Applicable requirements: Section 1, 5.c, 5.e, 5.f, & Attachment A 2 - Policy has no direct requirements that must be flowed down. The commercial acquired launch services may utilize standard practices. 3, 5 - Policy has no direct requirements that must be flowed down.
7	<a href="#">NPD 8730.5</a>	Initial 10/25/05	NASA Quality Assurance Program Policy	Yes Applicable per the note	Yes Applicable per the note	No	No	No	Yes Applicable per the note	1, 6 - Applicable requirements: 1.a-1.c, 5.d, & Attachment A 2 - Quality assurance program requirements contained in NPD 8730.5 in para 1.b & Appendix A will be delineated in any agreement between NASA and a provider. 3, 5 - Policy has no direct requirements that must be flowed down. NASA leaders, managers, supervisors, and employees are accountable for Quality Assurance program success within their assigned areas of responsibility.
8	<a href="#">NPR 8000.4</a>	A 12/16/08	Risk Management Procedural Requirements	Yes Applicable per the note	No	Yes Applicable per the note	No	No	Yes Applicable per the note	1, 3, 6 - Applicable requirements: 2.2.b, & Chapter 3. 2, 4, 5 - This NPR has no direct requirements that must be flowed down.
9	<a href="#">NPR 8621.1</a>	B 5/23/06 w/ Chg 3 9/24/09	Mishap and Close Call Reporting, Investigating, and Recordkeeping	Yes Applicable per the note	No	No	No	Yes Applicable per the note	Yes Applicable per the note	1, 5, 6 - Applicable requirements: 1.3.3.1, 1.4.8, 1.4.9, 1.4.21, 1.4.26, 1.4.27, 1.5.1, 1.5.3, 1.5.6.2, 1.6.1, 1.6.2, 1.7.1, 1.8.2, 1.9.1, 1.9.2, 1.9.5, 1.10, 2.2.1.b-2.2.1.u, 2.2.2, 2.2.5, 2.3.1, 2.5.1, 3.1.1, 3.1.4, 3.1.8, 3.3, 3.4, 3.5, 3.6.1, 3.6.4, 3.6.5, 3.7, 3.8, 3.9.2.1, 3.9.3.5, 3.10, 3.11, 4.4, 4.5, 4.6.2, 5.3.1.2, 5.3.2, 5.5.1, 5.7.2, 5.8, 5.9, 5.10.1, 7.4.1, 7.4.2, 7.4.6, 7.6.2-7.6.5, & 7.6.7. 2, 3, 4 - This NPR is not applicable to launch K19service contracts since NPS 1852-223-70. Safety and Health is on contract There are currently no planned human space flights manifested for ELVs. Human rating requirements will be imposed by programs.
10	<a href="#">NPR 8705.2</a>	B 5/6/08	Human-Rating Requirements for Space Systems	No	No	No	No	No	No	There are currently no planned human space flights manifested for ELVs. Human rating requirements will be imposed by programs.
11	<a href="#">NPR 8705.4</a>	Initial 6/14/04 w/ Chg 1 7/9/08 revalidate 7/8/09	Risk Classification for NASA Payloads	Yes Applicable per the note	No	No	No	No	Yes Applicable per the note	1, 6 - Applies to payloads only, not for a servicing contract. CubeSats qualify as payloads. Applicable requirements: 1.3.2, 1.3.3, 1.3.5, & 2.3. 2, 3, 4, 5 - This NPR has no direct requirements that must be flowed down.

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12	<a href="#">NPR 8705.5</a>	A 6/7/10	Technical Probabilistic Risk Assessment (PRA) Procedures for Safety and Mission Success for NASA Programs and Projects	Meets Intent	No	No	No	No	Meets Intent	1, 6 - The reliability impact to missions from risks methodology used by SMA Launch Services Division will continue to be implemented in lieu of this NPR. 2, 3, 4, 5 - No PRA requirements will be imposed on new contracts.
13	<a href="#">NPR 8705.6</a>	A 4/9/09	Safety and Mission Assurance Audits, Reviews, and Assessments	Yes Applicable per the note	No	No	No	No	Yes Applicable per the note	1, 6 - Applicable requirements: 2.2.8, 3.2.7, 3.2.8, 4.2.5, & 4.2.7. 2, 3, 4, 5 - This NPR has no direct requirements that must be flowed down.
14	<a href="#">NPR 8715.1</a>	Initial 8/9/99 w/ Chg 3 2/1/3/06 w/ NID of 11/07	NASA Occupational Safety and Health Programs w/Change 3 (02/13/06)	Yes Applicable per the note	No	No	Yes	No	Yes Applicable per the note	1, 6 - Applicable requirements: P.2, 1.1.3, & 2.3-2.6.1. Although NASA employees working at off-site contractor facilities must comply with OSHA, NFPA, and State regulations, specific requirements from NPR 8715.1 must be implemented by NASA supervisors and complied with by NASA employees to ensure employees are knowledgeable of hazards, are provided a safe and healthful work environment, receive appropriate safety and health training, and have an avenue to report hazardous conditions. 2, 3, 5 - Applies only in NASA owned facilities or launch sites. Contractor must follow local, State, and Federal regulations. 4 - Fully applies.
15	<a href="#">NPR 8715.3</a>	C 4/17/09 w/ Chg 4 7/20/09	NASA General Safety Program Requirements	Yes Applicable per the note	Yes Applicable per the note	Yes Applicable per the note	Yes Applicable per the note	Yes Applicable per the note	No	1, 3, 4 - Applicable requirements: See the attached spreadsheet. 2 - Applicable requirements: See the attached spreadsheet. Current NLS contract calls out KHB 1710.2 (superseded by KNPR 8715.3), which executes the intent of NPR 8715.3, that being general safety practices. Future NLS contracts call out both KNPR 8715.3 and NPR 8715.3. Does not apply in commercial facilities/launch sites. 5 - Applicable requirements: See the attached spreadsheet. Current ELVIS contract calls out KHB 1710.2 (superseded by KNPR 8715.3), which executes the intent of NPR 8715.3, that being general safety practices. Does not apply in commercial facilities/launch sites. 6 - Non-NASA locations must follow local, State, and Federal regulations, in addition to any safety standards for that specific facility. This NPR has no direct requirements that must be flowed down.
16	<a href="#">NPR 8715.5</a>	A 9/17/10	Range Safety Program	Yes Applicable per the note	Yes Applicable per the note	No	No	No	Yes Applicable per the note	1, 2, 6 - Currently this NPR is not on contract to the LSP. If put on future contracts, applicable requirements would be: 1.3.7, 1.4, 2.2.2, 2.2.3, 3.2.4-3.2.10, & 3.3-3.4. Non-NASA locations must follow local, State, and Federal regulations, in addition to any range safety standards for that specific facility. 3, 4, 5 - This NPR has no direct requirements that must be flowed down.
17	<a href="#">NPR 8715.6</a>	A 5/14/09 w/ Chg 1 5/14/09	NASA Procedural Requirements for Limiting Orbital Debris	Yes Applicable per the note	Yes Applicable per the note	No	No	No	Yes Applicable per the note	1, 2, 6 - Applicable requirements: P.2.4, P.2.5, 1.3.10.4, 2.1.1, 2.1.4, 2.1.5, 2.2.1, 2.2.2.1-2.2.2.3, 2.2.2.5, 2.2.2.6, 2.2.2.8, 2.2.2.9, 2.2.4.2, 3.1, 3.2.1-3.2.3, 3.2.5-3.2.7, 3.2.9, 3.2.10, 3.3.1.2, 3.3.1.3, 3.3.2, 3.3.3.1-3.3.3.3, 3.3.3.4, & 3.4. Requirements from NASA-STD-8719.14 that are not being met by current launch service providers will be covered by waivers per NASA-STD 8709.20. 3, 4, 5 - This NPR has no direct requirements that must be flowed down.

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18	<a href="#">NPR 8715.7</a> (formerly <a href="#">NASA-STD 8719.8</a> )	Initial 5/30/08	Expendable Launch Vehicle (ELV) Payload Safety Program	Yes Applicable per the note	Yes Applicable per the note	No	No	No	Yes Applicable per the note	1, 2, 6 - Applicable requirements: 1.3.7, 1.4.5, 1.5.5, 1.5.7, 2.3.3- 2.3.5, 2.4.2, 2.6.1, 2.6.3, & 2.6.4. Current NLS contracts do not require this NPR. Future NLS contracts do not require the NPR, but they do contain wording on launch vehicle contractors' participation in and support of the Payload Safety Working Group. Applies only to NASA ELV payloads. 3, 4, 5 - This NPR has no direct requirements that must be flowed down. <b>Note:</b> New contracts will list NPR 8715.7, and existing contracts may list NASA-STD-8719.8; regardless of document listed, intent must be met.
19	<a href="#">NPR 8735.1</a>	B 12/28/07	Procedures For Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program and NASA Advisories w/Change 1 (4/23/04)	Yes Applicable per the note	No	No	No	No	Yes Applicable per the note	1, 6 - Applicable requirements: 1.2.4 & Chapter 4. 2, 3, 4, 5 - This NPR has no direct requirements that must be flowed down. The use of GIDEP by contractors is strongly encouraged.
20	<a href="#">NPR 8735.2</a>	A 8/2/06	Management of Government Quality Assurance Functions for NASA Contracts	Yes Applicable per the note	Yes Applicable per the note	No	No	No	Yes Applicable per the note	1, 6 - Applicable requirements: 1.2.4, 1.2.7, Chapter 2, Chapter 3, 4.1-4.5, 4.7-4.8, 5.5.3, & Chapter 8. 2 - Quality assurance requirements contained in NPR 8735.2 will be delineated in any agreement between NASA and a provider. 3, 4, 5 - This NPR has no direct requirements that must be flowed down. When LSP is in an advisory role, program/project may ask for assistance in verifying requirements in this NPR
21	<a href="#">NASA-STD 2202-93</a>	Initial 4/93	Software Formal Inspections Standard	Yes All apply	No	No	No	No	Yes All apply	1, 6 - Fully applies. 2, 3, 4, 5 - This NASA-STD has no direct requirements that must be flowed down.
22	<a href="#">NASA-STD 8709.2</a>	Initial 8/21/98	NASA Safety and Mission Assurance Roles and Responsibilities for Expendable Launch Vehicle Services	Yes All apply	No	No	No	No	Yes All apply	1, 6 - Fully applies. 2, 3, 4, 5 - This NASA-STD has no direct requirements that must be flowed down.
23	<a href="#">NASA-STD 8709.20</a>	Initial 8/6/10	Management of Safety and Mission Assurance Technical Authority (SMA TA) Requirements	Yes Applicable per the note	No	Yes Applicable per the note	Yes Applicable per the note	No	Yes Applicable per the note	1, 3, 4, 6 - Applicable Requirements: 2.1, 4.2.3-4.2.8, 4.4-4.7, 5.2.1, 6.2, & App B. 2, 5 - This NASA-STD has no direct requirements that must be flowed down.
24	<a href="#">NASA-STD 8719.7</a>	Initial 1/30/98	Facility System Safety Guidebook	Yes All apply	No	No	Yes All apply	No	No	1, 4 - Fully applies only in NASA owned facilities or launch sites. Does not apply in commercial facilities/launch sites. Facility safety requirements are covered in applicable range requirements (e.g., EWR-127-1, AFSPCMAN 91-710, RSM-2002). Contractor must follow local, State, and Federal regulations. For facilities, column 4 applies. 2, 3, 5, 6 - This NASA-STD has no direct requirements that must be flowed down.
25	<a href="#">NASA-STD 8719.9</a>	Initial w/ Chg 1 5/9/02	Standard for Lifting Devices and Equipment	Yes All apply	Yes All apply with a note	No	Yes All apply	Yes All apply with a note	No	1, 4 - Fully applies. 2, 5 - Fully applies if the work is performing work in an LSP owned/NASA owned facility, then the lifting standard will be required. In Non-NASA owned locations the applicable local, State, and Federal regulations will be followed in addition to any applicable range Requirements (e.g. EWR-127-1, AFSPCMAN 91-710, RSM-2002) for lifting and handling. Non-NASA locations must follow local, State, and Federal regulations, in addition to industry standards. 3, 6 - This NASA-STD has no direct requirements that must be flowed down.
26	<a href="#">NASA-STD 8719.10</a>	Initial 11/16/06	Standard for Underwater Facility and Non-Open Water Operations	No	No	No	No	No	No	LSP has no underwater facilities or water operations.

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27	<a href="#">NASA-STD 8719.11</a>	A 11/19/08	Safety Standard for Fire Protection	Yes All apply	Yes Applicable per the note	No	Yes Applicable per the note	Yes Applicable per the note	No	1 - Fully applies. 2, 4, 5 - All paragraphs apply with the exceptions of 10.1 Aircraft Hangars and Maintenance Areas, 10.2 Vehicle Repair Garages, and 10.7 Food Preparation Areas. 3 - This NASA-STD has no direct requirements that must be flowed down. 6 - Non-NASA locations must follow OSHA and NFPA regulations, in addition to any safety standards for that specific facility.
28	<a href="#">NASA-STD 8719.12</a> <a href="#">(formerly NSS 1740.12)</a>	Initial 8/93	Safety Standard for Explosives, Propellants, and Pyrotechnics	Yes All apply	No	No	Yes All apply	No	No	1, 4 - Fully applies. Additional local, State, and Federal requirements may be required for non-U.S. government owned facilities. 2, 3, 5, 6 - This NASA-STD has no direct requirements that must be flowed down.  Note: New contracts will list NASA-STD-8719.12, and existing contracts may list NSS-1740.12; regardless of document listed, Federal laws must be followed.
29	<a href="#">NASA-STD 8719.13</a>	B w/ Chg 1 7/8/04	Software Safety Standard	Yes Applicable per the note	No	No	Yes Applicable per the note	Yes Applicable per the note	Yes Applicable per the note	1, 6 - Applicable requirements: Chapters 4-7. 2 - Current launch service contracts do not include software development. AFSPCMAN 91-710 or EWR 127-1 would substitute NASA-STD-8719.13 for safety-critical software acquired or developed under the range requirements. If LSP launch service contractors have safety-critical software for use at Wallops Flight Facility, then all requirements listed for option 1 would apply. RSM-2002 does not contain software safety requirements. 3 - Advisory role for a mission does not require software safety standards to accomplish. 4 - If safety-critical software is acquired or developed for LSP owned property/facilities, then all requirements listed for LSP apply. 5 - If LSP support service contractor is acquiring or developing safety-critical software for LSP then all requirements listed for LSP apply.
30	<a href="#">NASA-STD 8719.14</a> <a href="#">(formerly NSS 1740.14)</a>	Initial w/ Chg 4 9/14/09	Process for Limiting Orbital Debris	Yes All apply per NPR 8715.6 restrictions	Yes All apply per NPR 8715.6 restrictions	No	No	No	Yes All apply per NPR 8715.6 restrictions	1, 2, 6 - Fully applies. NPR 8715.6, paragraph P.2.4 permits the use of NSS 1740.14 for existing missions, however, all reports must contain the information required in NASA-STD 8719.14, Appendices A & B. NPR 8715.6, paragraph P.2.4 requires the use of NASA-STD 8719.14 for any emerging missions. 3, 4, 5 - This NASA-STD has no direct requirements that must be flowed down.  Note: New contracts will list NASA-STD-8719.14, and existing contracts may list NSS-1740.14; regardless of document listed, U.S. Government Orbital Debris Mitigation Guidelines must be followed, per the 2010 National Space Policy.
31	<a href="#">NASA-STD 8719.17</a>	Initial 9/22/06	NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PV/S)	Yes All apply	No	No	Yes All apply	No	No	1, 4 - Fully applies only in NASA owned facilities or launch sites. Does not apply in commercial facilities/launch sites. Facility safety requirements are covered in applicable range requirements (e.g., EWR-127-1, AFSPCMAN 91-710, RSM-2002). Contractor must follow local, State, and Federal regulations. For facilities, column 4 applies. 2, 3, 5, 6 - This NASA-STD has no direct requirements that must be flowed down.
32	<a href="#">NASA-STD 8729.1</a>	Initial 12/1/98	Planning, Developing and Managing an Effective Reliability and Maintainability (R&M) Program	Yes All apply	No	No	No	No	Yes All apply	1, 6 - Fully applies. 2, 3, 4, 5 - This NASA-STD has no direct requirements that must be flowed down. R&M requirements covered in applicable range requirements (e.g., EWR-127-1, AFSPCMAN 91-710, RSM-2002) should be required in contracts.

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33	<a href="#">NASA-STD 8739.1</a>	A w/ Chg 1 3/4/08	Workmanship Standard for Polymeric Application on Electronic Assemblies	Yes All apply	No	No	Yes All apply	No	Yes All apply	1, 4, 6 - Fully applies. 2 - The commercially acquired launch services may utilize standard practices which are encouraged to meet/exceed this NASA-STD. NASA may advise and assist contractors and suppliers implying others may use the NASA standard. 3, 5 - This NASA-STD has no direct requirements that must be flowed down.
34	<a href="#">NASA-STD 8739.2</a> (soon to be replaced by IPC J-STD-001ES)	Initial w/ Chg 1 6/6/08	Workmanship Standard for Surface Mount Technology	Yes All apply	No	No	Yes All apply	No	Yes All apply	1, 4, 6 - Fully applies. 2 - The commercially acquired launch services may utilize standard practices which are encouraged to meet/exceed this NASA-STD. NASA may advise and assist contractors and suppliers implying others may use the NASA standard. IPC J-STD-001ES is replacing this NASA-STD in 2011 and its use is encouraged over this NASA-STD. 3, 5 - This NASA-STD has no direct requirements that must be flowed down.
35	<a href="#">NASA-STD 8739.3</a> (soon to be replaced by IPC J-STD-001ES)	Initial w/ Chg 3 6/6/08	Soldered Electrical Connections	Yes All apply	No	No	Yes All apply	No	Yes All apply	1, 4, 6 - Fully applies. 2 - The commercially acquired launch services may utilize standard practices which are encouraged to meet/exceed this NASA-STD. NASA may advise and assist contractors and suppliers implying others may use the NASA standard. IPC J-STD-001ES is replacing this NASA-STD in 2011 and its use is encouraged over this NASA-STD. 3, 5 - This NASA-STD has no direct requirements that must be flowed down.
36	<a href="#">NASA-STD 8739.4</a>	Initial w/ Chg 4 7/25/08	Crimping, Interconnecting Cables, Harnesses, and Wiring	Yes All apply	No	No	Yes All apply	No	Yes All apply	1, 4, 6 - Fully applies. 2 - The commercially acquired launch services may utilize standard practices which are encouraged to meet/exceed this NASA-STD. NASA may advise and assist contractors and suppliers implying others may use the NASA standard. 3, 5 - This NASA-STD has no direct requirements that must be flowed down.
37	<a href="#">NASA-STD 8739.5</a>	Initial w/ Chg 1 7/25/08	Fiber Optic Terminations, Cable Assemblies, and Installation	Yes All apply	No	No	Yes All apply	No	Yes All apply	1, 4, 6 - Fully applies. 2 - The commercially acquired launch services may utilize standard practices which are encouraged to meet/exceed this NASA-STD. NASA may advise and assist contractors and suppliers implying others may use the NASA standard. 3, 5 - This NASA-STD has no direct requirements that must be flowed down.
38	<a href="#">NASA-STD 8739.8</a>	Initial w/ Chg 1 5/5/05	Software Assurance Standard	Yes Applicable per the note	No	No	Yes Applicable per the note	No	Yes Applicable per the note	1, 4, 6 - If LSP is acquiring or developing software, then NASA-STD 8739.8 applies but only applicable requirements, which are dependent on the software classification. Software Class and criticality determine the level of effort for software assurance and applicable requirements. Applicable requirements: Chapters 5-7. 2, 3, 5 - This NASA-STD has no direct requirements that must be flowed down. The commercially acquired launch services are encouraged to use standard practices which meet/exceed this NASA-STD. NASA may advise and assist contractors and suppliers implying others may use the NASA standard.
39	<a href="#">NASA-HANDBOOK 8719.14</a>	Initial 7/30/08	Handbook for Limiting Orbital Debris	No Requirements in this NASA-HDBK Use is encouraged	No Requirements in this NASA-HDBK Use is encouraged	No	No	No	No Requirements in this NASA-HDBK Use is encouraged	There are no requirement in this NASA-Handbook, however its use is strongly encouraged as a reference.

**Addendum to the Traceability of SMA Requirements for NPR 8715.3C**  
*(Applicability applies to listed paragraph and all sub-paragraphs, unless specified otherwise)*

<b>NPR 8715.3 Paragraph</b>	<b>Req ID</b>	<b>1. LSP</b>	<b>2. LSP Launch Service Contracts</b>	<b>3. LSP Advisory Roles</b>	<b>4. LSP Owned Property/ Facilities</b>	<b>5. LSP Support Service Contract</b>	<b>6. LSP Personnel @ Non - NASA Locations</b>
1.2.1	45565	Y	Y	N	Y	Y	N
1.2.1.a-1.2.1.c	45566 - 45568	Y	Y	N	Y	Y	N
1.2.1.d	45569	Y	Y	N	N	Y	N
1.2.1.e	45570	Y	Y	N	Y	Y	N
1.2.1.f	45571	Y	Y	N	Y	Y	N
1.2.1.g	45572	Y	N	N	Y	y	N
1.2.1.h	45573	Y	N	N	N	y	N
1.2.1.i(1)	45574	Y	Y	N	Y	Y	N
1.2.1.j	45576	Y	N	N	Y	N	N
1.2.1.k	45577	Y	N	N	Y	y	N
1.2.1.L	45578	Y	Y	N	Y	Y	N
1.3	45581 - 45586	Y	Y	N	Y	Y	N
1.4	45591 - 45639	N	N	N	N	N	N
1.4.4(1)	45640	Y	N	N	Y	Y	N
1.4.5.a	45643	Y	Y	N	Y	Y	N
1.4.5.b	45644	Y	N	N	N	N	N
1.4.5.c	45645	Y	N	N	N	N	N
1.4.6.a	45647	Y	N	N	N	N	N
1.4.6.b	45648	Y	Y	N	N	N	N
1.5.2	45651	Y	Y	N	N	Y	N
1.5.2.a - 1.5.2.e	45652 - 45656, 60141	Y	Y	N	N	Y	N
1.5.2.f	45657	Y	Y	N	N	Y	N
1.5.2.f.1	45658	Y	Y	N	N	Y	N
1.5.2.f.2	45659	Y	Y	N	N	Y	N
1.5.2.f.3	45660	N	N	N	N	N	N
1.5.2.f.4 - 1.5.2.f.7	45661 - 45664	Y	Y	N	N	Y	N
1.5.2.f.8	45665	N	N	N	N	N	N
1.5.2.f.9	45666	Y	Y	N	N	Y	N
1.5.2.f.10	45667	Y	N	N	N	N	N
1.5.3	45668	Y	N	N	N	N	N
1.6.1.1.a(1)	45672	Y	Y	N	N	Y	N
1.6.1.1.a(2)	45673	Y	N	N	N	N	N
1.6.2.1.a	45676	Y	N	N	Y	N	N
1.6.2.1.b	45677	Y	Y	N	Y	Y	N
1.6.2.1.c(1)	45678	Y	N	N	N	N	N
1.6.2.1.d	45680	Y	N	N	Y	N	N
1.6.2.1.e	45681	Y	Y	N	N	Y	N
1.6.2.1.f(1)	45682	Y	N	N	N	N	N
1.6.2.1.f(2)	45683	Y	N	N	N	Y	N
1.7.1.1	60142	Y	N	N	N	N	N
1.7.2.1	45699 - 45711	Y	N	N	Y	N	N
1.7.2.2.a	45713	Y	N	N	Y	N	N
1.7.2.2.b	45714	Y	N	N	Y	N	N
1.7.2.2.c(1)	57236	N	N	N	Y	N	N
1.7.2.2.c(2)	60149	N	N	N	Y	N	N
1.7.3.1	45718 - 45721	Y	N	N	Y	N	N
1.7.4	45723	Y	N	N	Y	Y	N
1.8 - 1.12.3	45728 - 45778	N	N	N	N	N	N
1.10.2(1)	45761	Y	N	N	N	Y	N
1.12.4	45779	Y	N	N	N	N	N
1.13.4 - 1.13.5	45793 - 45804	Y	N	N	N	Y	N
1.13.6	45807 - 45811	N	N	N	N	N	N
1.14.3.a	59196	Y	N	N	N	N	N

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*(Applicability applies to listed paragraph and all sub-paragraphs, unless specified otherwise)*

<b>NPR 8715.3 Paragraph</b>	<b>Req ID</b>	<b>1. LSP</b>	<b>2. LSP Launch Service Contracts</b>	<b>3. LSP Advisory Roles</b>	<b>4. LSP Owned Property/ Facilities</b>	<b>5. LSP Support Service Contract</b>	<b>6. LSP Personnel @ Non - NASA Locations</b>
1.14.3.b	59198 - 59201	Y	N	N	N	N	N
1.14.3.c	59202	Y	Y	N	N	N	N
1.14.3.d.1	59204	Y	N	N	y	N	N
1.14.3.d.2	59205	N	N	N	N	N	N
1.14.3.d.3	59206	Y	N	N	N	N	N
1.14.3.d.4	59207	Y	N	N	Y	Y	N
1.14.3.e	59208	Y	Y	N	Y	Y	N
1.14.3.f	59209	Y	N	N	Y	N	N
1.14.3.g - 1.14.3.j	59210 - 59293	Y	N	N	N	N	N
2.2.1	45818	Y	N	N	N	N	N
2.2.2	45819	N	N	N	N	N	N
2.5.1.1 - 2.6.2	45892 - 45959	Y	N	N	N	N	N
2.7.1.a	45963	Y	N	N	N	Y	N
2.7.1.b	45964	Y	N	N	N	Y	N
2.7.1.c	45965	Y	N	N	N	Y	N
2.7.1.d	45966	Y	N	N	N	Y	N
2.8.1.a	45970	Y	N	N	N	N	N
2.8.1.b	45971	Y	N	N	N	Y	N
2.8.2.a	45973	Y	N	N	N	N	N
2.8.2.b	45974	Y	N	N	N	N	N
2.8.2.c	45975	Y	N	N	N	N	N
2.8.2.d	45976	Y	N	N	N	N	N
3.1.1	45981	N	N	N	N	N	N
3.2.1	45983	N	N	N	N	N	N
3.2.2.1.a	45986	Y	N	N	N	Y	N
3.2.2.1.b	45987	Y	N	N	N	Y	N
3.2.2.1.c	45988	Y	N	N	N	Y	N
3.2.2.1.d	45989	Y	N	N	N	Y	N
3.2.2.1.e	45990	Y	N	N	N	Y	N
3.2.2	45991 - 46023	N	N	N	N	N	N
3.2.3	45993	Y	N	N	N	Y	N
3.3.7	46025	Y	N	N	N	Y	N
3.4.2	46028	N	N	N	N	N	N
3.5.1	46031	Y	N	N	Y	Y	N
3.6.1	46035 - 46043	N	N	N	N	N	N
3.6.2.a	46045	Y	Y	N	Y	Y	N
3.6.2.b	46046	Y	Y	N	Y	Y	N
3.7.5.1 - 3.7.6.1	46054 - 46065	N	N	N	N	N	N
3.7.6.2	46066	Y	Y	N	Y	Y	N
3.8.2.a	46070	Y	N	N	Y	Y	N
3.8.2.b	46071	Y	N	N	Y	N	N
3.8.2.c	46072	Y	N	N	Y	N	N
3.8.2.d	46073	Y	N	N	Y	N	N
3.8.2.e	46074	Y	N	N	Y	N	N
3.8.2.f	46075	Y	N	N	Y	Y	N
3.8.2.g	46076	Y	Y	N	Y	Y	N
3.8.2.h	46077	Y	Y	N	Y	Y	N
3.8.2.i	46078	Y	Y	N	Y	Y	N
3.8.2.j	46079	Y	Y	N	Y	Y	N
3.8.2.k	46080	Y	Y	N	Y	Y	N
3.8.3	46081	Y	N	N	Y	N	N
3.9.2 - 3.9.5	46085 - 46104	Y	N	N	N	N	N
3.10.1	46107	Y	Y	N	Y	Y	N
3.11.1	46109	Y	Y	N	Y	Y	N
3.11.2	46110	Y	Y	N	Y	Y	N

**Addendum to the Traceability of SMA Requirements for NPR 8715.3C**  
*(Applicability applies to listed paragraph and all sub-paragraphs, unless specified otherwise)*

<b>NPR 8715.3 Paragraph</b>	<b>Req ID</b>	<b>1. LSP</b>	<b>2. LSP Launch Service Contracts</b>	<b>3. LSP Advisory Roles</b>	<b>4. LSP Owned Property/ Facilities</b>	<b>5. LSP Support Service Contract</b>	<b>6. LSP Personnel @ Non - NASA Locations</b>
3.11.3	46111	Y	Y	N	Y	N	N
3.11.4 - 3.13.2	46113 - 46141	N	N	N	N	N	N
3.13.4.1.a	46146	Y	N	N	N	Y	N
3.13.4.1.b	46147	Y	N	N	N	Y	N
3.13.4.1.c	46148	Y	N	N	N	Y	N
3.13.4.1.d	46149	Y	N	N	N	Y	N
3.13.4.2	46150	Y	N	N	N	N	N
3.13.4.3	46151	Y	N	N	N	N	N
3.13.4.4	46152	Y	N	N	N	N	N
3.14.2	46195	Y	N	N	N	N	N
3.14.3.1	46197	Y	N	N	N	N	N
3.14.3.2	46198	Y	N	N	N	N	N
3.14.4.1.a	46201	Y	N	N	N	N	N
3.14.4.1.b	46202	Y	N	N	Y	N	N
3.14.4.1.c(1)	46203	Y	N	N	Y	N	N
3.14.4.1.d	46204	Y	N	N	Y	N	N
3.14.4.1.e	46205	Y	N	N	Y	N	N
3.14.4.1.f	46206	Y	N	N	Y	N	N
3.14.4.1.g	46207	Y	N	N	Y	N	N
3.14.4.1.h	46208	Y	N	N	Y	N	N
3.14.5.1.a	46211	Y	N	N	N	N	N
3.14.5.1.b	46212	Y	N	N	N	N	N
3.14.6.1(1)	46214	Y	Y	N	N	N	N
3.14.7	46216 - 46226	N	N	N	N	N	N
3.15.3	46230	Y	Y	N	Y	Y	N
3.15.4.a	46232	Y	Y	N	Y	Y	N
3.15.4.b	46233	Y	Y	N	Y	Y	N
3.15.4.c	46234	Y	Y	N	Y	Y	N
3.15.4.d	46235	Y	Y	N	Y	Y	N
3.15.4.e	46236	Y	Y	N	Y	Y	N
3.15.4.f	46237	Y	Y	N	Y	Y	N
3.15.4.g	46238	Y	Y	N	Y	Y	N
3.15.5.1	46240	Y	N	N	Y	N	N
3.15.5.2	46242 - 46244	N	N	N	N	N	N
3.15.6.1.a	46247	Y	Y	N	Y	Y	N
3.15.6.1.b	46248	Y	Y	N	Y	Y	N
3.15.6.1.c	46249	Y	Y	N	Y	Y	N
3.15.6.1.d	46250	Y	Y	N	Y	Y	N
3.15.6.1.e	46251	Y	Y	N	Y	Y	N
3.15.7.1.a(1)	46254	Y	N	N	N	N	N
3.15.7.1.b	46255	Y	N	N	N	N	N
3.15.7.1.c	46256	Y	N	N	N	N	N
3.15.7.1.d	46257	Y	N	N	N	N	N
3.15.7.1.e(1)	46258	Y	N	N	N	N	N
3.15.7.1.f	46259	Y	N	N	N	N	N
3.15.7.1.g(1)	46260	Y	N	N	N	N	N
3.15.7.1.h	46261	Y	N	N	N	N	N
3.15.7.1.i	46262	Y	N	N	N	N	N
3.15.7.2	46263	Y	N	N	N	N	N
3.15.7.3	46264	Y	N	N	N	N	N
3.15.8.1.a	46267	Y	N	N	Y	N	N
3.15.8.1.b	46268	Y	N	N	Y	N	N
3.15.8.1.c(1)	46269	Y	N	N	Y	N	N
3.17.3	46275	Y	N	N	Y	N	N
3.17.4.a	46277	Y	N	N	Y	N	N

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<b>NPR 8715.3 Paragraph</b>	<b>Req ID</b>	<b>1. LSP</b>	<b>2. LSP Launch Service Contracts</b>	<b>3. LSP Advisory Roles</b>	<b>4. LSP Owned Property/ Facilities</b>	<b>5. LSP Support Service Contract</b>	<b>6. LSP Personnel @ Non - NASA Locations</b>
3.17.4.b	46278	Y	N	N	Y	N	N
3.17.4.c	46279	Y	N	N	Y	N	N
3.17.5(1)	46280	Y	Y	N	Y	N	N
3.18.1	60203	Y	Y	N	Y	N	N
3.18.1.a	60204	y	Y	N	Y	N	N
3.18.1.b(1)	60205	y	Y	N	Y	N	N
3.18.2	60207	Y	Y	N	Y	N	N
3.18.3 - 3.18.4	60208 - 60222	N	N	N	N	N	N
3.18.5.a	60224	Y	Y	N	Y	N	N
3.18.5.b	60225	Y	Y	N	Y	N	N
3.18.5.c	60226	Y	Y	N	Y	N	N
3.18.5.d	60227	Y	Y	N	Y	N	N
3.18.6	60228	Y	Y	N	Y	N	N
Chapter 4	46285 - 46314	N	N	N	N	N	N
Chapter 5	46322 - 46378	N	N	N	N	N	N
6.1.3	46383	Y	N	N	N	N	N
6.2.1	46386 - 46388	N	N	N	N	N	N
6.2.2.a	46390	Y	Y	N	N	N	N
6.2.2.b	46391	Y	Y	N	N	N	N
6.2.2.c	46392	Y	Y	N	N	N	N
6.2.2.d	46393	Y	Y	N	N	N	N
6.2.2.e	46394	Y	Y	N	N	N	N
6.2.2.f(1)	46395	Y	N	N	N	N	N
6.2.2.g	46396	Y	N	N	N	N	N
6.2.3	46398 - 46407	N	N	N	N	N	N
6.2.4 - 6.2.6	46409 - 46427	Y	N	N	N	N	N
6.2.7 - 6.2.9	46429 - 46439	N	N	N	N	N	N
6.3.1.a	46442	Y	N	N	N	N	N
6.3.1.b	46443	Y	N	N	N	N	N
6.3.1.c	46444	Y	N	N	N	N	N
6.3.1.d	46445	Y	Y	N	N	N	N
6.3.3.1.a	46454	Y	N	N	N	N	N
6.3.3.1.b(1)	46455	Y	N	N	N	N	N
6.3.3.2	46456	N	N	N	N	N	N
6.3.4.1 - 6.3.5.1	46458 - 46473	Y	N	N	N	N	N
6.3.5.2	46475 - 4677	N	N	N	N	N	N
6.3.6.1	46480 - 46489	Y	N	N	N	N	N
6.3.6.2	46491 - 46524	N	N	N	N	N	N
6.3.7 - 6.3.9	46497 - 46517	Y	N	N	N	N	N
6.4.2.1.a	60249	Y	N	N	N	N	N
6.4.2.1.b(1)	46523	Y	N	N	N	N	N
7.2.1(1)	46528	Y	N	N	N	N	N
7.2.2	46530 - 46534	N	N	N	N	N	N
7.2.3	46536 - 46540	Y	N	N	N	N	N
7.3	46543 - 46564	N	N	N	N	N	N
7.4.1	46557 - 46560	Y	Y	N	Y	Y	N
7.4.3	46562 - 46565	N	N	N	N	N	N
7.4.4	46566	Y	Y	N	N	Y	N
7.4.5	46569 - 46592	Y	N	N	N	N	N
7.4.6.1	46595 - 46601	Y	N	N	N	Y	N
7.4.6.2(1)	46602	Y	N	N	N	Y	N
7.4.6.3.a	46604	Y	Y	N	N	Y	N
7.4.6.3.b	46605	Y	Y	N	N	Y	N
7.5.1	46607	Y	N	N	N	N	N
7.5.2	46608	Y	N	N	N	N	N

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7.5.3	46609	Y	N	N	N	N	N
7.6.1.a	46612	Y	N	N	N	Y	N
7.6.1.b	46613	Y	Y	N	N	Y	N
8.2 - 8.4	46625 - 46650	N	N	N	N	N	N
8.5.1.a(1)	46653	Y	N	N	N	N	N
8.5.1.b(1)	46654	Y	N	N	N	N	N
8.6	46657 - 46662	N	N	N	N	N	N
9.2.1	46666	Y	N	N	N	Y	N
9.2.2	46667	Y	N	N	N	Y	N
9.3.1.a	46670	Y	N	N	N	Y	N
9.3.1.b - 9.3.1.h	46671 - 46677	Y	N	N	N	N	N
9.3.2 - 9.4.3	46679 - 46705	Y	N	N	N	N	N
9.5 - 9.6	46707 - 46712	Y	Y	N	Y	Y	N
9.7.1.a(1)	46715	Y	N	N	N	N	N
9.7.1.b	46716	Y	N	N	N	N	N
Chapter 10	46727 - 46765	N	N	N	N	N	N
Chapter 11	57254 - 57279	N	N	N	N	N	N