NASA TECHNICAL STANDARD	**NASA-STD 8709.20**
National Aeronautics and Space Administration Washington, DC 20546	Approved: 2010-08-06

MANAGEMENT OF SAFETY AND MISSION ASSURANCE TECHNICAL AUTHORITY (SMA TA) REQUIREMENTS

Measurement System Identification:
None

Requests for relief from the requirements in this document are processed through the NASA Safety and Mission Assurance Technical Authority

APPROVED FOR PUBLIC RELEASE – DISTRIBUTION IS UNLIMITED

This page intentionally left blank.

DOCUMENT HISTORY LOG

Status	Document Revision	Approval Date	Description
Baseline		2010-08-06	Initial Release *(JWL4)*

This document is subject to reviews per Office of Management and Budget Circular A-119, Federal Participation in the Development and Use of Voluntary Standards (02/10/1998) and NPD 7120.4, NASA Engineering and Program/Project Management Policy.

This page intentionally left blank.

FOREWORD

NASA's Governance Model directs that Officials-in-Charge are responsible for defining and administering requirements within their functional areas of NASA. As a part of that responsibility, this NASA Standard (NASA-STD) provides a consistent process for determining applicability of requirements and requesting relief (also known as waivers and deviations) from Agency-level Safety and Mission Assurance (SMA) requirements under the Technical Authority (TA) of the Office of Safety and Mission Assurance.

This standard is a mandatory NASA Standard as called out by NPR 8715.3, paragraph 1.13.

Comments and questions concerning the contents of this publication should be referred to the National Aeronautics and Space Administration, Director, Safety and Assurance Requirements Division, Office of Safety and Mission Assurance, Washington, DC 20546 or via "Feedback" in the NASA Technical Standards System at http://standards.nasa.gov.

Bryan O'Connor
Chief, Safety and Mission Assurance

6 AUG 2010
Approval Date

This page intentionally left blank.

TABLE OF CONTENTS

CHAPTER 1. SCOPE 9
1.1 Purpose 9
1.2 Applicability 9
1.3 Precedence 10

CHAPTER 2. APPLICABLE DOCUMENTS 11
2.1 General 11
2.2 Government Documents 11

CHAPTER 3. ABBREVIATIONS, ACRONYMS, AND TERM DEFINITIONS . 12
3.1 Abbreviations and Acronyms 12
3.2 Definitions 13

CHAPTER 4. PROCESS FOR ADJUDICATION OF REQUESTS FOR RELIEF FROM SMA TA REQUIREMENTS 17
4.1 Overview 17
4.2 Responsibilities 19
4.3 Approval and Risk Acceptance Authority Determination 21
4.4 Adjudication of Requests for Non-applicability of Agency-wide SMA Requirements 27
4.5 Tailoring of Agency-wide SMA Requirements 28
4.6 Waivers and Deviations of Agency-wide SMA Requirements 28
4.7 Adjudication of Waivers of Agency-wide SMA Requirements Needed for Real-Time Operations 29

CHAPTER 5. DETERMINATION OF APPLICABILITY AND TRACEABILITY OF SMA TA REQUIREMENTS 31
5.1 Why Do Traceability? 31
5.2 Step 1: Determination of Applicability 31
5.3 Step 2: Determination of Traceability 32
5.4 Step 3: Determination of Traceability Meet/Exceed 32
5.5 Configuration Management of Traceability Results 33

CHAPTER 6. SMA TA Mandatory Standard Determination 34
6.1 Standards Definitions 34
6.2 Requirements within Mandatory Standards 34

APPENDIX A SMA TA Requirement Relief Request Forms 36
A.1 Waiver/Deviation Form 36

A.2 OSMA Review of OSHA-related Requirements Relief Requests to Determine if They Can be Delegated 45
A.3 Subject Matter Expert Review 45

APPENDIX B Applicable Process for Adjudicating Requests for Relief 46

APPENDIX C Documents to Which this Process Applies 57
C.1 NASA Documents 57
C.2 Other Documents 58

LIST OF TABLES

Table 1: Adjudication is Required by the Chief/SMA to Obtain Relief from the Following Requirements 23
Table 2: Adjudication is Required by the Chief/SMA to Obtain Relief in the Following Situations 23
Table 3: Situations where Relief Requests must be Reviewed by OSMA but may be Delegated 23
Table 4: NASA's OSHA-Related Standards 24
Table 5: Additional Requirements to Determine when Relief from Requirements in OSHA-related NASA-STDs must get Chief/SMA Approval 25
Table 6: Additional Requirements to Determine when OSHA-related NASA-STDs must have OSMA as a Mandatory Reviewer 26
Table 7: Additional Requirements for Adjudicating Relief Requests to OSHA-related NASA-STDs 26
Table 8: Applicability Example 32
Table 9: Traceability Example 32
Table 10: Quality Records 56

LIST OF FIGURES

Figure 1: Overview of the Relief Request Process 19
Figure 2: Adjudication Determination Overview 22
Figure 3: SMA TA Form #1: 36
Figure 4: SMA TA Form #2: 45
Figure 5: SMA TA Form #3: 45
Figure 6: Adjudication Process Flowchart 47

Management of Safety and Mission Assurance Technical Authority (SMA TA) Requirements

CHAPTER 1. SCOPE

1.1 PURPOSE

This NASA-Standard (NASA-STD) defines the process requirements for managing the application of NASA's SMA requirements, under the SMA TA. This is a broad-scope document with six main objectives:

a. This document outlines how to do tailoring, which is the process by which all SMA TA requirements are reviewed for applicability to the program. Requirements that are deemed non-applicable are documented in a relief request.

b. This document provides guidance on how to do requirements traceability. For all requirements that have been deemed applicable, traceability is used to track where in the program the requirement is implemented and to determine whether or not those requirements meet or exceed the imposing requirement.

c. This document defines the process to request "relief" from applicable requirements.

d. This document defines the process of granting requirement relief requests.

e. This document defines whether a relief request can only be adjudicated by the Chief, Safety and Mission Assurance (Chief/SMA) or can be delegated to any lower level of SMA Technical Authority (TA).

f. This document defines special requirements for relief request processing due to types of programs and other federal requirements.

1.2 APPLICABILITY

1.2.1 This document is applicable to NASA Headquarters and NASA Centers including Component Facilities, programs, projects, and Technical and Service Support Centers. This document applies to the Jet Propulsion Laboratory (JPL), other contractors, and grant recipients only to the extent specified or referenced in applicable contracts, grants, or agreements.

1.2.2 The processes and requirements defined in this NASA-STD apply to all NASA SMA requirements contained in requirements documents in which SMA TA is the owner/author, the Office of Primary Responsibility (OPR), or the point-of-contact (POC) per NPD 8070.6, Technical Standards, NPR 1400.1, NASA Directives Procedural Requirements, paragraph 4.3, or this NASA-STD in paragraph 4.3 and Appendix C.

1.2.3 This document is applicable during all phases of the life cycle of systems, facilities, or operations.

1.2.4 This standard may be cited in contract, program, and other Agency documents as a supporting document for technical requirements or as a reference for guidance.

1.3 PRECEDENCE

1.3.1 The process in this document fully complies with the waiver/deviation requirements in NPR 1400.1, paragraph 4.2, and NASA Memo 7120-81 (which updated NPR 7120.5D), paragraph 3.6.

1.3.2 Relief requests approved prior to the initial issuance of this document remain in effect as approved through the date indicated on the request unless canceled by the adjudication authority or the Chief, Safety and Mission Assurance.

CHAPTER 2. APPLICABLE DOCUMENTS

2.1 GENERAL

The documents listed in this section are referenced within this document. The latest issuances of cited documents shall be used unless otherwise indicated. The reference documents are accessible via the NASA Online Directives Information System (NODIS) at http://nodis3.gsfc.nasa.gov/ or the NASA Technical Standards System at http://standards.nasa.gov, or directly from the Standards Developing Organizations (SDOs) or other document distributors. For documents placed on contracts, normally the specific version that is specified in the contract is used unless otherwise stated in the contract.

2.2 GOVERNMENT DOCUMENTS

NPD 1000.0	Governance and Strategic Management Handbook
NPD 8070.6	Technical Standards
NPR 1400.1	NASA Directives Procedural Requirements
NPR 7120.5D	NASA Space Flight Program and Project Management Requirements (as updated in NASA Memo 7120-81 of September 2009)
NPR 8715.3	NASA General Safety Program Requirements
NPR 8715.5	Range Safety Program
NPR 8715.7	Expendable Launch Vehicle Payload Safety Program
NASA-STD 0005	Configuration Management

CHAPTER 3. ABBREVIATIONS, ACRONYMS, AND TERM DEFINITIONS

3.1 ABBREVIATIONS AND ACRONYMS

Acronym	Term
ANSI	American National Standards Institute
CMO	Configuration Management Organization
CSO	Chief Safety and Mission Assurance Officer
HOWI	NASA Headquarters Office Work Instruction
JPL	NASA Jet Propulsion Laboratory
JSC	NASA Johnson Space Center
NMO	NASA Management Office
NODIS	NASA On-Line Directives Information System. (NODIS can be accessed at: http://nodis3.gsfc.nasa.gov/)
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
OPR	Office of Primary Responsibility. This can be the organization within NASA who either owns or is the POC for the document (or portion of a document).
OSHA	Department of Labor, Occupational Health and Safety Administration
OSMA	NASA Headquarters Office of Safety and Mission Assurance
POC	Point of Contact
SMA	Safety and Mission Assurance
SMARTS	Safety and Mission Assurance Requirements Tracking System (SMARTS can be accessed at: http://smarts.nasa.gov)
SME	Subject Matter Expert
START	NASA Standards and Technical Assistance Resource Tool. (START can be accessed at: http://standards.nasa.gov)
TA	Technical Authority (See NASA Memo 7120-81, paragraph 3.4 (which updated NPR 7120.5D), NPR 7120.7, paragraph 3.4, or NPR 7120.8, paragraph 3.7, for a definition of TA and roles/responsibilities of the TA for each program type)

USG	United States Government

3.2 DEFINITIONS

Note: Definitions marked as "from NASA-STD 0005"or "from NASA Memo 7120-81 which updated NPR 7120.5D" are quoted from those documents and NOT redefined for this document.

Term	**Definition**
Acceptance	Agreement by the appropriate NASA Management Official to the change in the level of risk to programs, hardware and personnel and taking the responsibility for the potential outcome of any increase in risk.
Adjudication	The process that encompasses the process of review, concurrence, and approval of a request for relief from an Agency-wide SMA requirement. The process includes the approval or disapproval of the request by the Chief, Safety and Mission Assurance (or delegated approval authority) and acceptance or rejection of the change in risk and acceptance of the new risk level by the appropriate NASA management official. A request is adjudicated when all steps in the process are complete.
Approval	Decision by the SMA TA that the request for relief is within NASA policy and may be implemented after the appropriate NASA Management official accepts the risk.
Can	Good practices, guidance, or options are specified with the nonemphatic verbs "should," "may," or "can" (from NASA-STD 0005).
Center SMA	The SMA office at a NASA Center/Facility. For component facilities, the SMA office of the parent NASA Center is the Center SMA office for purposes of the process defined in this document.

Example: For requests involving NASA Headquarters personnel or personnel who operate by delegated authority from OSMA (example: Orbital Debris Program Office at JSC), then OSMA is the "Center SMA office."

Chief, Safety and Mission Assurance Approval Required	Approval of requests for relief that must come to the Chief, Safety and Mission Assurance.
Concurrence	Formal documentation of an agreement/recommendation/opinion, but with no authority to approve or accept risk.
Configuration Management Organization (CMO)	The collaborative configuration management effort shared between the Program/Project/Center and the Supplier (from NASA-STD 0005).

Contract	Term is used interchangeably with agreement in this standard to indicate an agreement between a Supplier and a Program/Project/Center. This agreement could be between government organizations (e.g., task agreement) or between the Government and a business enterprise or academia (e.g., contract) (from NASA-STD 0005).
Derived Requirement	A requirement that is not a directed requirement.
Deviation	A documented authorization releasing a program or project from meeting a requirement before the requirement is put under configuration control at the level the requirement will be implemented (from NASA Memo 7120-81, Appendix A, which updated NPR 7120.5D).
Directed Requirement	An SMA requirement that has been imposed on NASA SMA as a flowdown of a requirement from a level higher to, or outside of OSMA. This includes requirements in standards which are called out as mandatory in the source of other directed requirements. *Example: Seatbelt requirements in NPR 8715.3 are directed requirements because Executive Order 13043 requires seatbelt usage by all Federal employees in a duty status.*
Exception	The term "exception" is no longer used. "Non-applicable" requirement determination is made via a deviation or waiver request.
Local Center	The Center or component facility executing or hosting the applicable activity.
Loosely Coupled Program/Project	Programs/Projects that are not a part of Tightly Coupled Programs. (See NASA Memo 7120-81, paragraph 2.1.4, which updated NPR 7120.5D, for further definitions on program/project types.)
Mandatory SMA Standard	A standard (NASA owned/developed or otherwise) that is directed to be used by a requirement in an NPD, NPR, or other mandatory SMA standard.
May	Good practices, guidance, or options are specified with the nonemphatic verbs "should," "may," or "can (from NASA-STD 0005).
Non-applicable Requirement	Not relevant, not capable of being applied (from NASA Memo 7120-81, Appendix A, which updated NPR 7120.5D).
OSMA Policy/Requirements Website	Website where OSMA documents can be accessed: http://www.hq.nasa.gov/office/codeq/doctree/index.htm

Program/Project/Center The NASA management function for the activity (from NASA-STD 0005).

Project (as used in this document)
The organization accountable for the work being performed.

Real-time Waiver Request A request for relief that was unforeseen and is needed on a short-term basis to meet an immediate operational need.

Relief A waiver, deviation, or request for determination of non-applicability to modify or eliminate a stated requirement and usually not meet the full intent and letter of the requirement as stated.

Relief Adjudication See "Adjudication"

Requirement Relief Request Request for a waiver, deviation, or determination of non-applicability.

Requirements Traceability The process of mapping originating requirements to implementing requirements. This is completed after a determination of applicable requirements is completed.

Safety and Mission Assurance Requirement Tracking System – (SMARTS)
NASA data system that contains meta data about Agency-wide SMA requirements (SMARTS can be accessed at: http://smarts.nasa.gov).

Shall The verb "shall" indicates a mandatory requirement. The collaborative CMO tasks use the emphatic "shall" to indicate an obligation or requirement on the part of the Supplier. (An exception is when the Supplier and Program/Project/Center and/or CMO are involved in a collaborative requirement. The emphatic "shall" is used as a grammatical convenience and does not imply special expectation on the Program/Project/Center. Example: The Program/Project/Center and the Supplier shall perform….) (from NASA-STD 0005).

Should Good practices, guidance, or options are specified with the nonemphatic verbs "should," "may," or "can" (from NASA-STD 0005).

Subject Matter Expert Person recognized as an expert in the technical area under review.

Supplier The organization that applies the CM [configuration management] discipline. The supplier may be a contractor, academia, or the Government. The supplier may be the design agency involved in production of a product, or be limited to producing documentation. Note: The role of "contractor" is not defined in this document and is assumed to be included within the role of "supplier" (from NASA-STD 0005).

Tailoring The process used to refine or modify an applicable requirement by the implementer of the requirement. If the revised requirement meets/exceeds the original requirement, and has no increase in risk from

that of the original requirement, then it may be accepted/implemented by appropriate local authority; otherwise a waiver/deviation may be required.
Note: This definition of "tailoring" is for use within the application of the SMA TA as defined by the Chief, Safety and Mission Assurance and is different from the definition for tailoring in NASA Memo 7120-81, paragraph 3.6.1.2 and Appendix A.

Tightly Coupled Program

Programs having multiple projects that execute portions of a mission or missions. No single project is capable of implementing a complete mission. Typically, multiple NASA Centers contribute to the program. Individual projects may be managed at different Centers. The program may also include other Agency or international partner contributions. (This definition is from NASA Memo 7120-81, paragraph 2.1.4.d, which updated NPR 7120.5D)

Note: As of August 2010, NASA has four tightly coupled programs: Constellation, International Space Station, Space Shuttle, and Stratospheric Observatory for Infrared Astronomy (SOFIA).

Waiver

(1) A written authorization to depart from a specific directive requirement (from NPR 1400.1).

(2) A documented authorization releasing a program or project from meeting a requirement after the requirement is put under configuration control at the level the requirement will be implemented This definition is from NASA Memo 7120-81, Appendix A, which updated NPR 7120.5D).

Waiver, Fleet

A type of waiver which will apply to multiple products/situations that are using the same design or operation which may be outside of a single program/project or Center.

For example: A waiver applicable to all Delta II 7925 ELVs.

Will

The verb "will" describes a fact, expectation, or premise of accomplishment by a Program/Project/Center (from NASA-STD 0005).

CHAPTER 4. PROCESS FOR ADJUDICATION OF REQUESTS FOR RELIEF FROM SMA TA REQUIREMENTS

NOTE: OSMA is in the process of removing all other processes for requesting relief from requirements contained in the NPD/NPR/NASA-STDs for which NASA Headquarters OSMA is the OPR or POC.

4.1 OVERVIEW

4.1.1 Goals

a. Per NPD 1000.3, The NASA Organization, paragraphs 4.6.2.1.f-h, the Chief, Safety and Mission Assurance:

> *"4.6.2.1.f. Develops strategies, policies, procedures, guidelines, and standards for safety, reliability, maintainability, and quality engineering and assurance (hereinafter abbreviated as SMA requirements).*
>
> *4.6.2.1.g. Ensures the incorporation and fulfillment of SMA requirements established for NASA programs and institutions through the structured application of SMA technical authority.*
>
> *4.6.2.1.h. Verifies the effectiveness of SMA requirements, activities, and processes."*

b. To meet these responsibilities, the Chief, Safety and Mission Assurance, (Chief/SMA) has established a set of requirements in NPDs, NPRs, and NASA-STDs to assure safety and mission success for all NASA activities. Within NPR 1400.1, NASA Directives Procedural Requirements, and NPD 8070.6, Technical Standards, the rules for establishment and maintenance of requirements are stated. NPR 1400.1 also grants the Chief/SMA with the authority to grant relief from requirements where the Chief deems that relief is within NASA's best interests.

c. The process for granting relief to SMA requirements stated in this chapter includes the requirements and guidelines to initiate, process, review, and grant relief. In establishing this process, the need for thorough implementation and control of SMA requirements must be weighed against the need to allow subordinate levels of NASA SMA management to have the authority to manage their scope of NASA activities without burdening local management with excessive bureaucracy.

d. It is the intent of this policy to delegate any requirement relief requests to local/direct SMA Chief Safety and Mission Assurance Officers (CSO) unless the Chief/SMA believes that the relief request requires his personal attention either to approve the request or to make a recommendation to the NASA Administrator or other senior official outside of NASA. Requirements which may require the Chief/SMA's personal attention include:

- Requirements which address items of special interest to the nation. These requirements include orbital debris, national security, and public health/safety risks.

- Requirements which address items of special interest to NASA. These requirements include safety concerns from external advisory bodies or internal mishaps or reviews.
- Requirements which address items that have proven troublesome to NASA. These requirements include responses to Type A mishaps or systemic internal NASA nonconformances.
- Requirements which request relief for a Headquarters person or a Center Director.
- Selected requirement relief requests which would increase the risk to the general public, NASA personnel, or NASA mission.
- Requirements derived from sources outside of NASA, such as Federal law/regulation/code, direction from the President or Congress, and interagency/international agreements.

Note: NASA does not have waiver approval authority for Federal, State, or local regulations (e.g., Department of Labor – Occupational Safety and Health Administration (OSHA), California State OSHA), or for consensus standards that are prescribed as applicable by Federal regulations (such as American National Standards Institute (ANSI) standards) that apply to NASA unless specifically granted by the levying authority.

4.1.2 Scope of the Process Identified in this Chapter.

This document provides the process for requesting relief from the following documents (see Appendix C for a list of documents):

a. NPDs and NPRs where OSMA is the Responsible Office, with the exception of NPR 8715.5, Range Safety Program and NPR 8715.7, Expendable Launch Vehicle Payload Safety Program. Until further notice, requests for relief of requirements within NPR 8715.5 and NPR 8715.7 will use the waiver/deviation process specified in NPR 8715.5 and NPR 8715.7, respectively.

b. NASA-STDs where OSMA is the lead per NPD 8070.6.

c. Non-NASA standards and other requirements documents where OSMA is the designated Responsible Office or TA. This includes standards that are invoked as mandatory from a document listed in Appendix C.

Example: ANSI/NCSL Z540.1-1994 (R2002), General Requirements for Calibration Laboratories and Measuring and Test Equipment, which is invoked by NPD 8730.1, Metrology and Calibration.)

4.1.3 Center requirement documents and standards where the OPR or issuing signature is the Center SMA Director are considered within the authority of the NASA SMA TA and may be included in the process defined in this document at the discretion of the Center SMA Director.

4.1.4 Relief from implementing a requirement exactly as stated in the source document may be granted for SMA TA requirements by requesting a deviation or waiver or tailoring.

4.1.5 Figure 1 shows the top level flow of the relief request process.

Figure 1: Overview of the Relief Request Process

4.2 RESPONSIBILITIES

4.2.1 Chief, Safety and Mission Assurance shall:

a. Manage the process to review and grant relief from SMA TA requirements (Requirement).

b. Remain the final approval authority for granting requests for relief from all Agency-level SMA requirements as specified in paragraph 4.3, unless higher authority is required (Requirement). [See paragraph 4.2.3 for acceptance of risk.]

c. Provide a clear delegation of authority and approval for relief of SMA requirements (Requirement).

d. Reserve the right to overturn any delegated approval decision or revoke a delegation (Requirement).

e. Provide a means to efficiently determine if a requirement is delegated for relief request approval (Requirement).

4.2.2 OSMA shall maintain a listing of which requirements are directly derived from OSHA requirements to include the NASA requirement, the OSHA parent requirement(s), and any supplemental agreements giving NASA latitude in implementation to include acceptable de minimus violations (Requirement).

> *Note: As of August 2010, this listing is under development, but nearing completion. When this listing is complete, it will be placed under configuration management as an addition to each NASA-STD. It will remain the responsibility of the OSMA lead for each NASA-STD to maintain the listing. Additionally, the information will be added into SMARTS for ease of implementation. Further information on OSHA-related NASA STDs can be found in paragraph 4.3.2.*

4.2.3 Mission Directorate Associate Administrators; Center Directors; Director, NASA IV&V Facility; Director, JPL; Director, NASA Management Office for JPL; and program/project managers shall:

a. Establish and implement local processes and requirements to comply with this document (Requirement).

b. Ensure requirements relief requests are approved/disapproved and any residual risk is accepted at the appropriate management level in accordance with this document (Requirement). (See NPR 8000.4 for definition of residual risk.)

4.2.4 NASA Center SMA Directors shall:

a. Lead the development of local processes and requirements to comply with this document (Requirement).

b. Ensure all relief requests include a risk assessment that determines whether there is an increase in risk because of the nonconformance with a requirement (Requirement).

c. Ensure all requests for requirements relief that will increase the residual risk include a plan for mitigating the associated risk (Requirement).

d. Ensure that risk plans identify dates or development milestones for bringing the project into compliance or mitigating the risk per any corrective action plans, with the associated requirement (Requirement).

e. Assist programs/projects in the preparation of requirements relief requests (Requirement).

f. Ensure that appropriate organizations and subject matter experts (SME) are provided an opportunity to review a request and that their comments and concerns are thoroughly documented as a part of the request (Requirement).

g. Ensure that, if contractors or non-NASA personnel will be affected by the relief request, they are notified of the proposed change and, if appropriate, invited to comment on the request (Requirement).

h. Appoint an 'SMA Requirement Relief Coordinator' to be the POC for all requests for requirements relief and maintain the file of adjudicated requests (Requirement).

i. Provide a copy of each adjudicated (approved or disapproved) relief request to OSMA that is processed at the Center per this document (Requirement).

4.2.5 Officials having delegated approval authority for requirement relief requests on behalf of the SMA TA shall ensure that prior to approval:

a. The change in risk is characterized (aka: quantified) and appropriate mitigation measures have been listed (Requirement).

b. All appropriate NASA organizations and SMEs on the topic/requirements are invited to comment on the request, at either Headquarters or elsewhere about the Agency (Requirement).

c. All concerns with the request that were expressed during the adjudication process, including contractor or non-NASA personnel comments, have been documented either as a part of the adjudication process or as an individual opinion (Requirement).

> *Note: The SMA TA signature does not imply any acceptance of the associated risk, nor does it authorize implementation of the revised requirement per the relief request.*

4.2.6 Officials accepting the risk and implementing requirements relief requests shall:

a. Be of a level of seniority that is senior to the request initiator in the requestor's program/project/Center reporting chain (Requirement).

b. Accept the change in risk noted for the personnel, property, and activities listed on the relief request on behalf of the U.S. Government, for U.S. Government personnel, property, or the general public (Requirement).

c. Ensure that SMEs who are contacted for review of a request are listed in the completed adjudication documentation (Requirement).

d. Ensure that the lessons learned and that increases in residual risk are communicated to all affected personnel (NASA and non-NASA) (Requirement).

e. Ensure that risk mitigation actions/plans that are defined or described in the relief request are implemented as specified and that proper monitoring methods are employed (Requirement).

4.2.7 The SMA Requirement Relief Coordinators shall:

a. Send a copy of all adjudicated requests for relief from Agency-level SMA requirements to the OSMA Requirements Manager no later than 10 calendar days after the final risk acceptance (Requirement).

b. Ensure the original of the completed request is filed in their organization (Requirement).

4.2.8 Request initiators shall:

a. Ensure that risk mitigation actions/plans defined/described in the relief request are implemented as soon as practical and that proper monitoring methods are employed (Requirement).

b. Sign the request (Requirement).

c. For relief requests that originate from a non-NASA organization, obtain the approval/concurrence of the NASA management as well as the Director of the requesting organization (Center Director equivalent) (Requirement).

d. Ensure that approved relief requests are implemented per the risk acceptance and the final approved request.

4.3 APPROVAL AND RISK ACCEPTANCE AUTHORITY DETERMINATION

Figure 2: provides an overview of the process to determine whether the approval of relief from a requirement can be delegated and who will have the responsibility for acceptance of the change in risk.

Figure 2: Adjudication Determination Overview

4.3.1 The Chief, Safety and Mission Assurance shall approve all requests for relief via a determination of non-applicability, tailoring, waiver, or deviation (authority is not delegated) for the following requirements:

Note: The below listing is for the <u>initial</u> rollout of this process. Further analyses may increase or decrease the list of individual requirements that may not be delegated.

Note: For assistance on determining if approval of relief for individual requirements may be delegated, contact the NASA Headquarters OSMA Requirements Manager (at 202/358-1155 or via e-mail at NASA-SMARTS@NASA.GOV).

Note: If higher or external authority is needed to grant a final waiver/deviation to a requirement, the Chief, Safety and Mission Assurance shall coordinate the adjudication with the organization having the granting authority.

Table 1: Approval is Required by the Chief/SMA to Obtain Relief from the Following Requirements

All Requirements in Document	All Requirements in Chapters in NPR 8715.3
NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping	**Chapter 6**: Nuclear Safety for Launching Radioactive Materials
NPR 8705.2, Human-Rating Requirements for Space Systems	**Chapter 10**: Process/Requirements for the SMA Portions of Requests for Liability Insurance or Indemnification of EAV Developers
NPR 8715.6, NASA Procedural Requirements for Limiting Orbital Debris	**Chapter 11**: NASA Meteoroid Environment Program
NASA-STD 8719.14, Process for Limiting Orbital Debris	

Table 2: Approval is Required by the Chief/SMA to Obtain Relief in the Following Situations

All directed requirements	Final relief adjudication requires NASA Administrator (or higher) approval.
Relief is for NASA Headquarters employee, function, responsibility, or office.	Designated in writing by Chief/SMA with special interest to senior NASA management (may be as a result of audits, mishaps, other items of national interest).
Relief personally for the Center Director or the person who would adjudicate for the SMA TA.	Rejected/disapproved by SMA TA and is being appealed to NASA Headquarters. *(See NPR 7120.5, NASA Spaceflight Program and Project Management Requirements)*
Substitute standard requested for use by multiple programs or multiple Centers.	When a dissenting opinion has been filed against an adjudicated request for relief at the Center or the Program level, the delegation authority is revoked for the original request.
Requirements which are being implemented jointly by NASA and another agency.	

Table 3: Situations where Relief Requests must be Reviewed by OSMA but may be Delegated

Relief requests that would establish a substitute requirements document or standard to an entire NASA-STD or other NASA SMA mandatory standard.	Requirements which would grant relief to requirements in a mandatory Voluntary Consensus Standard (aka; Mandatory SMA Standard not owned by NASA).

Example: A voluntary consensus standard (e.g.; ANSI STD) to replace the use of a NASA-STD.

Note: This designation may be done for specific worksites, projects, programs, Agency-wide, one/multiple Center(s), or others, and may be designated for a specified period of time. The list of affected requirements will be posted on the OSMA Web site and be available through SMARTS.

Note: See 4.3.2 Notes for directed requirements pertaining to noncompliant existing institutional equipment that cannot reasonably be made compliant in a timely manner, and for de minimus violations of directed OSHA requirements.

4.3.2 Special considerations apply when requesting relief from NASA-STDs relating to requirements imposed in the Code of Federal Regulations under the control of the OSHA, as listed in Table 4.

Table 4: NASA's OSHA-Related Standards

NASA-STD 8719.9, Standard for Lifting Devices and Equipment
NASA-STD 8719.10, Standard for Underwater Facility and Non-Open Water Operations
NASA-STD 8719.11, Safety Standard for Fire Protection
NASA-STD 8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics
NASA-STD 8719.17, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PV/S)
NASA Safety Standard 1740.12, Safety Standard for Explosives, Propellants, and Pyrotechnics

Note: NSS 1740.12 was replaced by NASA-STD 8719.12 but may be used on legacy contracts.

a. Many NASA occupational health and safety requirements are derived from OSHA regulations/rules/laws based on the coordination between NASA and OSHA. These requirements are managed by OSMA.

b. NASA does not have the authority to waive these requirements to a level where the authority requirement is exceeded beyond a de minimus level.

Note: As per the Occupational Safety and Health Act of 1970, Sec. 9 – Citations, and 29 CFR 1903.14(a), " …de minimus violations [which] have no direct or immediate relationship to safety or health." Requests for relief from requirements documented by published OSHA Standard Interpretations at **www.OSHA.gov** *as de minimus violations need not be adjudicated. Requirements/procedures concerning undocumented but deemed-acceptable de minimus violations are defined below.*

Also, in a documented interpretation, OSHA states "Under OSHA's de minimus policy, employers who comply with outdated versions of national consensus standards will not be cited for violations of the current standard as long as the outdated version provides at least the same level of safety and health. OSHA does not issue citations, impose penalties or require correction of de minimus violations." [OSHA letter to Power Crane and Shovel Association, May 23, 2001]

Also, "Under the de minimus policy, compliance with the requirements of current applicable industry consensus standards, such as the standards published by National Fire Protection Association (NFPA), is accepted as compliance with the Occupational Safety and Health Act (OSH Act), if the consensus standards provide for equal or greater personnel protection than corresponding OSHA standards. A de minimus violation is not cited and does not need to be abated. [OSHA letter to Seymour Epstein, August 2, 2001]

c. It is recognized that NASA owns and operates existing, critical institutional equipment that may not meet certain OSHA regulations, and that such noncompliances may not fall under the de minimus violation policy. When such equipment cannot be brought into compliance (through repair, replacement, or decommission) without significant cost and mission impact, but can be documented as equivalently safe under the provisions of one of the NASA-STDs listed in this section and in accordance with the General Duty Clause of 29 CFR 1910.60, NASA may continue using such equipment in accordance with all of the provisions of the relevant NASA-STD until formal direction is obtained from OSHA. Since the noncompliant requirements for equipment in this category are OSHA-derived, requests for relief from them shall be adjudicated in accordance with the requirements in the remainder of section 4.3.2.

d. Relief requests for non-directed and non-OSHA derived or implied requirements in NASA-STDs listed in Table 4 may be adjudicated at each Center unless redirected by a reviewing or approving party to the Chief/SMA or unless the situation is described in Table 5 (Requirement):

Table 5: Additional Requirements to Determine when Relief from Requirements in OSHA-related NASA-STDs must get Chief/SMA Approval

For all requirements identified (or suspected) as having a direct parentage to OSHA requirements beyond a de minimus violation.
When the Chief/SMA believes that higher authority internal and/or external to NASA is needed to grant a relief request. OSMA coordinates the processing through the granting authority.
Requirements specified in the NASA-STD as requiring Chief/SMA approval.
Requests which involve multiple programs or Centers. Each program/Center provides adjudication of the request for their organization accepting the risk, then the request is sent to Chief/SMA for final approval for NASA-wide application.
NASA-STD 8719.9: Lifting a load above a human.
NASA-STD 8719.12 (and NSS 1740.12): Keep-out zones where there is a credible probability of occurrence with a credible probability of a human casualty.

NASA-STD 8719.17: • New pressure vessels and compressed gas cylinders that fall within the mandatory scope of ASME or DOT. • Repair and alteration of pressure vessels and pressure equipment within the mandatory scope of the National Board Inspection Code, NB-23.

Note: This includes when NASA's obligations under the General Duty Clause of 29 CFR 1960 implicitly require that actions be taken, perhaps similar to published OSHA regulations, in order to assure a safe working environment even if there is no directed or OSHA-derived requirement to do so.

Note: An example would be an existing non-ASME vessel, which would be a violation of 29 CFR 1910.169 when storing air, but is instead being used to store any other pressurized gas. Even though this application may not be specifically covered by OSHA in 1910, the hazards are likely the same or worse as when storing air. The OSMA POC would be a mandatory reviewer for the request.

Table 6: Additional Requirements to Determine when OSHA-related NASA-STDs must have OSMA as a Mandatory Reviewer

The Headquarters OSMA POC for that NASA-STD may direct that OSMA shall be a mandatory reviewer of the request.
If the OSMA reviewer has not responded in the requested timeline, the Center may continue with the adjudication process without a response.

Table 7: Additional Requirements for Adjudicating Relief Requests to OSHA-related NASA-STDs

For tightly coupled programs and projects in tightly coupled programs and a loosely coupled program or project	The Chief/SMA shall approve the documentation of non-applicability to Agency-level requirements unless they are delegated.
	The Center SMA Director of the program office's host Center shall approve tailoring and waiver/deviation requests for the SMA TA which are delegated. This individual shall concur on those requirements which are not delegated.
	The program manager (or senior in-line manager) shall accept any change in residual risk to the program/project, per applicable official program/project authority/delegation.
	The Center Director for <u>each</u> Center where there is increased residual risk to Center/facility infrastructure or personnel shall accept the increased residual risk for their Center/facility.
	Approval authority may be further delegated to the project/element level CSO (or Deputy) consistent with the level of the board that will review the relief request.
	For relief requests for formally delegated projects, the delegated Center is the lead for the adjudication.

For NASA Centers and Facilities.	The Center SMA Director approves the documentation of non-applicability to Agency-level requirements which are delegated. This individual shall concur on those which are not delegated.
	The Center SMA Director shall approve tailoring, waiver, and deviation requests for the SMA TA which are delegated. This individual shall concur on those which are not delegated.
	The Center Director for each Center shall accept the increased residual risk for their Center/facility.
	Approval authority may be delegated to facility Deputy Director or Acting Director but may not be delegated to the Facility SMA Director.

4.3.3 Acceptance of any increased risk shall not be delegated to the Center SMA Director without written authorization from the Chief, Safety and Mission Assurance.

4.3.4 The Chief, Safety and Mission Assurance may delegate relief request approval within the Office of Safety and Mission Assurance.

4.4 ADJUDICATION OF REQUESTS FOR NON-APPLICABILITY OF AGENCY-WIDE SMA REQUIREMENTS

4.4.1 The individual requesting an adjudication of non-applicability of Agency SMA requirements as defined above shall first perform a formal (documented and peer-reviewed) applicability analysis that establishes a finding that the requirement does not apply (Requirement).

Example: A valid method of documenting non-applicability can be found in the May 6, 2008, letter from Chief, Safety and Mission Assurance to the Constellation Program concurring in the requirements traceability analysis that granted non-applicability to several SMA TA requirements. The letter to the Constellation Program from Chief/SMA can be found at: http://www.hq.nasa.gov/office/codeq/doctree/doctree_f.htm

Note: See Chapter 5 of this NASA-STD for information on traceability.

Note: The Engineering TA has established a different process and requirements for determination of non-applicability of Agency-wide engineering requirements which is defined in NASA Memo 7120-81, paragraph 3.6.1.2, which updated NPR 7120.5D, as: "Relief from a prescribed requirement that is not relevant and/or not capable of being applied to a specific program, project, system or component is identified as a non-applicable requirement in the associated deviation or waiver. Relief from non-applicable requirements can be approved by the program or project level Technical Authority."

4.4.2 Documentation supporting a determination of non-applicability of Agency SMA requirements shall be forwarded to OSMA within three calendar weeks of adjudication (Requirement).

4.5 TAILORING OF AGENCY-WIDE SMA REQUIREMENTS

4.5.1 Tailoring allows the implementers of requirements to further define/redefine requirements to assist in their implementation. (*See the definition in paragraph 3.2.*)

4.5.2 Agency-wide SMA requirements may be tailored by requirements implementers provided that the revised (tailored) requirement or set of revised requirements:

a. Fully meets the intent and scope of the Agency-wide SMA requirement(s) (as determined by the organization imposing the requirement).

b. Does not increase the risk as defined in NPR 8000.4, Agency Risk Management Procedural Requirements.

4.5.3 Tailoring of Agency-wide SMA requirements shall be formally documented and peer-reviewed with the approval of the SMA TA representative at that level for programmatic requirements or the Center SMA Director for institutional, matrixed, programmatic, or programmatic oversight requirements (Requirement).

4.5.4 The Chief, Safety and Mission Assurance shall approve all tailoring for requirements which are performed by NASA Headquarters personnel and are personally performed by the Center Director (Requirement).

4.5.5 Tailoring of requirements, which do not meet the criteria in paragraph 4.5.2, shall require a waiver/deviation request to be submitted (Requirement).

4.6 WAIVERS AND DEVIATIONS OF AGENCY-WIDE SMA REQUIREMENTS

4.6.1 Waivers and deviations of Agency-level SMA requirements may be requested by any NASA organization or contractor required to meet the requirements and shall be approved per the requirements in this document (Requirement).

4.6.2 Waivers/deviations should be submitted as early in the life cycle or workflow process as practical.

> *Note: When waiver/deviation requests are not adjudicated early in the life cycle, the program/project/Center is at risk of having to undo or cancel work that has already been performed.*

4.6.3 The organization requesting the relief shall characterize all risks associated with the SMA disciplines (Requirement).

4.6.4 Risk characterization shall be reviewed by the SMA TA as the initial step in processing the request for approval (Requirement).

> *Note: Risk characterization should be determined by the requesting organization.*

4.7 ADJUDICATION OF WAIVERS OF AGENCY-WIDE SMA REQUIREMENTS NEEDED FOR REAL-TIME OPERATIONS

Note: 'Normal business hours' for purposes of this document are defined as those when the management personnel needed to process the request are available.

4.7.1 Waivers to SMA TA requirements may be processed outside of the process defined above for any of the following reasons:

a. Work to be performed is outside of normal working hours and is needed to continue processing of hardware that was not previously planned.

b. Work to be performed is located outside of a NASA/USG facility where it is impractical to contact the normal NASA management prior to performance of the activity.

c. Work is needed promptly to correct an off-nominal situation or contingency.

d. Work is needed promptly to avoid real-time operational constraints.

Note: In this case, the risk of the operational constraint will have to be compared to the risk of the request.

4.7.2 A real-time waiver request may be adjudicated provided the following conditions are met:

a. After identification of the need, the change in risk shall be analyzed, reviewed by the NASA SMA lead official at the worksite, and documented in the log (or other official records) being kept with the operation (Requirement).

b. The senior NASA management official at the worksite shall make a reasonable attempt to contact the local facility NASA management officials who would be involved with a nominal waiver request (Requirement).

c. The waiver shall only be approved, and the risk accepted by signature of the senior NASA SMA official (for the Chief, Safety and Mission Assurance) and the senior NASA management official (for risk acceptance at the worksite) for the immediate operation for a specific time period (Requirement).

d. If the appropriate SMA, program, or Center management official is not present at the worksite and time is critical to continuing the work, they may verbally provide concurrence with the real-time waiver to the NASA operational lead. The NASA operational lead must personally document this verbal concurrence prior to implementation and the person providing the verbal approval must sign that documentation at the earliest reasonable time. This documentation shall be kept as a part of the permanent record of the waiver.

4.7.3 All waivers approved per this paragraph shall:

a. Be reviewed by the NASA management and SMA officials that would be involved with a nominal waiver at the earliest opportunity to determine if the waiver needs to be converted to a normally processed waiver using the entire adjudication process defined in this chapter (Requirement).

b. Be documented on the local or SMA TA waiver form and forwarded to the Center SMA waiver coordinator and, as appropriate, to the OSMA requirements POC within three business days (Requirement).

CHAPTER 5. DETERMINATION OF APPLICABILITY AND TRACEABILITY OF SMA TA REQUIREMENTS

Note: This Chapter is included as guidance for the identification of which SMA TA requirements are considered as a part of a program/project/Center's SMA requirements set.

5.1 WHY DO TRACEABILITY?

Performing traceability between the Agency-level SMA TA requirements set and a program/project/Center's SMA requirements will result in:

- Knowing that an SMA Program covers all of the necessary areas/disciplines and knowing which requirements are not applicable to that program.
- Improving auditing effectiveness by being able to compare requirements and implementations across various Center/program/project (this facilitates the finding of systematic vs. local problems).
- Encouraging a feedback (closed loop process) to get information on less than optimal requirements and requirements difficult to implement back to the requirements developers.
- Understanding the impacts of proposed changes to parent requirements for local implementation.

5.2 STEP 1: DETERMINATION OF APPLICABILITY

5.2.1 As the first step to trace requirements, the senior organization performs the following actions (an example effort is shown in the below tables to illustrate how the traceability process progresses) (Requirement):

Note: The terms "senior organization" and "lower-level organization" refer to the levels of management. For example, a project office (lower-level organization) works for a program office (senior organization) or programs (lower-level organization) work for Mission Directorates (senior organization).

a. Identify the list of documents that they own, control, implement, or enforce.

b. Determine which documents from the list of documents do not apply to the lower level.

c. For each remaining document, build a matrix of the requirements ("shall" statements) and determine, for each lower level organization, whether the requirement is:

i. Directly applicable as written or with modification.

ii. Not applicable.

iii. Indirectly applicable (somebody else will impose this requirement).

5.2.2 This work is done by the senior organization with help from lower level organizations and is maintained by the senior organization.

Table 8: Applicability Example

Doc	Para #	Text	Req #	Project #1	Project #2	Project #3
X	1	ABCD …	2-1	Applicable	Applicable	Applicable
	2	EFGH …	2-2	Not Applicable	Not Applicable	Not Applicable
	3	IJKL …	2-3	Applicable with Mod: IJL… without K	Applicable with Mod: IJ… without K & L	Not Applicable
	4	MNOP …	2-4	Applicable	Applicable	Applicable
	5	QRST …	2-5	Not Applicable	Applicable	Not Applicable

Note: "ABCD …" and "EFGH…" (et. al.) are text examples.

5.3 STEP 2: DETERMINATION OF TRACEABILITY

Next, the following work is done by the lower-level organization:

5.3.1 Identify the requirement(s) at their level that implement each applicable requirement(s).

Note: This can be many-to-one, one-to-one, or one-to-many relationship.

5.3.2 Add traces to the applicability matrix.

Note: This identification is done by the lower-level organization but must have participation from the senior organization for interpretation of senior requirements.

Table 9: Traceability Example

(This table uses Table 8 as the basis for this table.)

Sr Doc	Sr Doc Para #	Sr Doc Text	Sr Doc Req #	Project #1's Doc	Project #1's Para	Project #1's Text
X	1	ABCD …	2-1	Proj 1: Doc Y	1.1	ABCDIJL…
	3	IJKL …	2-3	Proj 1: Doc Y	1.1	ABCDIJL…
	4	MNOP …	2-4	Proj 1 Doc: Z	3.3	MNOP

5.4 STEP 3: DETERMINATION OF TRACEABILITY MEET/EXCEED

5.4.1 The senior organization reviews provided traces to check for meet/exceed of each of the applicable requirements.

5.4.2 Results can be:

a. Lower requirement is acceptable and meets/exceeds senior requirement.

b. Lower requirement does not meet/exceed senior requirement.

c. The senior organization reconsiders the applicability of requirement or reassigns responsibility.

d. Risk is assessed for the differences.

e. The lower-level organization submits a waiver request for relief.

5.4.3 The senior organization checks to see if any changes violate direction senior to them then processes waiver requests and updates applicability matrix with results.

5.4.4 The senior organization issues a report of the results of the applicability/traceability effort to list:

a. Deviations and waivers granted or determination of non-applicability made.

b. Indirectly applicable requirements.

c. Directly applicable requirements.

d. Traces to directly applicable requirements.

5.4.5 The senior organization maintains a report under their configuration management system with copies available to the lower-level organization.

> *Note: This process needs to be updated periodically as the documents within the senior and lower-level organizations change.*

5.5 CONFIGURATION MANAGEMENT OF TRACEABILITY RESULTS

5.5.1 Results of the traceability determination should be maintained by the senior organization.

5.5.2 Traceability determinations made to Agency-level SMA TA requirements should be maintained within the SMARTS.

CHAPTER 6. SMA TA MANDATORY STANDARD DETERMINATION

6.1 STANDARDS DEFINITIONS

6.1.1 The term "Standard" in this NASA-STD refers to a document which may or may not have the word "standard" in the title and is under configuration management by any of the following organizations:

a. NASA

b. Other Government agencies or offices (U.S. or foreign)

c. International organizations (e.g.; International Organization for Standardization [ISO])

d. Industry/technical/academic societies and institutes (e.g.; American Society of Mechanical Engineers)

6.1.2 Per NPR 1400.1, NASA directives may apply to the Jet Propulsion Laboratory (JPL) or to other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements. Standards are also intended to be able to be placed on contracts either in their entirety or specific sections.

6.1.3 A mandatory standard for the NASA SMA TA is defined as a requirements document (aka: "Standard") that is called out by:

a. Citation in a requirement in an NPD, NPR, or mandatory NASA-STD where the document owner/POC is the OSMA.

b. Citation in a requirement in a document which OSMA is tracking (e.g.: NPR 7120.5) which levies an Agency-level SMA requirement.

c. A memorandum or other direction from the Chief/SMA or senior.

6.1.4 An applicable standard for the SMA TA is defined as a document cited in the body of a requirements document that contains provisions or other pertinent requirements directly related to and necessary for the performance of the activities specified by the requirements document.

6.1.5 A reference document for the SMA TA is defined as a document whose usage is listed in an NPD, NPR, NASA-STD, or other requirements document but is not cited from an applicable requirement and does not imply that the standard must/or shall be followed (aka: "shall" is not used in the paragraph).

6.1.6 Documents not covered in the above paragraphs where the SMA TA is the owner/POC are considered to be reference standards.

6.2 REQUIREMENTS WITHIN MANDATORY STANDARDS

6.2.1 The Chief/SMA shall determine NASA SMA TA mandatory standards as either a part of the review/approval process of an NPD, NPR, mandatory NASA-STD, other mandatory requirements document, or by separate memorandum (Requirement).

6.2.2 The Chief/SMA shall maintain a list of all mandatory NASA SMA TA standards available Agency-wide (Requirement).

6.2.3 Other NASA SMA TA officials and NASA management may determine additional mandatory standards for use within their span of responsibility.

6.2.4 A mandatory standard shall remain mandatory until either the citing requirement is superseded or an applicability determination is made for the citing requirement(s) or the requirements document itself (Requirement).

6.2.5 Requirements within mandatory standards shall be followed and implemented with the same rigor as a requirement that is contained in an NPD or NPR (Requirement).

6.2.6 Mandatory standards shall be included as a part of all SMA TA applicability determinations either as a single entry citation for the whole document or requirement-by-requirement (Requirements).

6.2.7 Requests for relief to individual requirements or groups of requirements (e.g.; chapters or sections) shall follow the process described in Chapter 4 (Requirement).

6.2.8 Requests for relief to either make a mandatory standard not applicable or replace it with other standards shall be made against the citing requirement(s) following the process described in Chapter 4 (Requirement).

APPENDIX A SMA TA REQUIREMENT RELIEF REQUEST FORMS

A.1 Waiver/Deviation Form

Note: Definitions of each field on the form are listed after the figure. Sample Form Field Abbreviations
"XXX" indicates an alphanumeric entry is needed,
"###" indicates that a numeric entry is needed,
"Yes/No" or other italics in this format indicates one of the values is needed.

Figure 3: SMA TA Form #1:

NASA SMA TA Relief Request
(July 2009 version)

Section 1: Submission Data

Local #: XXXX-#### **Title:** XXX	
Request Information	**Request Scope**
Request #: RFR-### **Date:** ##/##/#### **Requesting Entity:** XXX **Requesting Org:** XXX	**Relief Type:** Waiver/Deviation **Request Type:** XXX **Single/Fleet**: Single/Fleet **Criticality**: XXX **Duration**: XXX **Category**: Programmatic/Institutional/HQ
Initiator Information	**Adjudication Required**
Name: XXX **Phone**: XXX-XXX-XXXX **Email**: XXX@nasa.gov **Org**: XXX **Signature**:_____ **Date** :_____	**Mandatory Reviewers** XXX **Approvals** **NASA Lead TA**: Chief, Safety and Mission Assurance
Affected Document	**Scope of Risk**
Doc #:XXX.XX **Title**: XXX **OPR**: XXX **Relief**: XXX	**Public Safety**: *Yes/No* **Public Assets**: *Yes/No* **NASA Personnel Safety**: *Yes/No* **Contractor Personnel Safety**: *Yes/No* **Flight**: *Yes/No* **Ground**: *Yes/No* **Software**: *Yes/No* **Facility**: *Yes/No* **Security**: *Yes/No*

Risk Scope Items
XXX
Risk Scope Activities
XXX
Risk Scope Personnel
XXX

Request Summary
XXX
Request Justification
XXX
Additional Information
XXX
Risk Change
XXX
Risk Mitigation
XXX
Risk Analysis Summary
XXX
Attached Supporting Documents
XXX

Section 2: Requirement Information

Para: X.X.X	**Req ID:** #####	
Current Requirement Text: XXX		
Proposed Requirement Text: XXX		

(Repeat Section 2 for each chapter/paragraph for which relief is being requested)

Section 3: Review Signatures

(repeat SME signatures as needed) SME Technical Review (Sign/Print Name)	Date	Concur Reject
(repeat SME signatures as needed) SME Technical Review (Sign/Print Name)	Date	Concur Reject
(repeat Management as needed) Management Concurrence (Sign/Print Name)	Date	Concur Reject
SMA TA Risk Review (Sign/Print Name)	Date	Concur Reject
SMA TA Policy/Management Review (Sign/Print Name)	Date	Concur Reject

(Add other review signature blocks as necessary)

Section 4: Adjudication Signatures

Chief, Safety and Mission Assurance (or delegated) approval: XXX (Sign/Print Name)	Date	Approve Reject
Risk Acceptance (Sign/Print Name)	Date	Accept Risk Cancel Request Defer Request Concur with Rejection

(Add other risk acceptance signature blocks as necessary)

Section 5: Comments and Appeal

Technical Authority Comments
XXX
Justification for Appeal
XXX

ATTACHMENTS:

(add as needed)

Form #1 Relief Request Form Field Definitions

Section 1: Submission Data	
- Title - Local	- Short title of the waiver (please limit to about 30 characters) - Locally generated serial number(s) for local tracking/filing. (e.g.; KSC-012 or CxP-Orion-012)
Request Information:	
- Request #	- NASA-wide tracking number for the request (Sequential serial number assigned by SMARTS for SMA TA-wide tracking. If the initial form is provided via the SMARTS, then a number will be provided, otherwise, please leave blank.)
- Date	- Date request is being made (Month/Day/Year)
- Requesting Entity	- Title of the person or function requesting the relief request (e.g.; Orbital Debris Manager, Launch Services Program Office)
- Requesting Org	- Organization and mail code of requesting person or organization. Do not enter an office or program name. For contractor requests, list the contract reference
Request Scope:	
- Relief Type	- Enter either “Waiver” or “Deviation” (see paragraph 3.2, Definition of Terms)
- Request Type	- Type of relief needed. Choose one: = “Non-Applicable” - Requirement does not apply = “Meet/Exceed” - Alternate document will replace NASA mandated document = “Additional Risk” - Acceptance of increased risk due to tailoring = “Nonconformance” - Unable to meet requirements = “Change Requirement” - Request for alternate requirement (includes tailoring with risk increase and relief from fully meeting original requirement intent)
- Single/Fleet:	- Is this waiver for a single instance or for multiple items? Choose: ‘Single’ for applicability of this request to a single item, ‘Fleet’ if this request applies to multiple items of essentially the same configuration.
- Criticality	- Criticality of the need associated with the request. *(e.g.; critical, routine, emergency)*
- Duration	- How long will this relief be needed (e.g.; until CDR, until launch, during launch only, until operations complete, until June 2012)? Be as specific as possible.
- Category	Choose who is implementing this requirement? “Center,” “Program,” or “Headquarters.” “Program” includes any Program, project, or element. “Headquarters” includes NASA Headquarters, NASA Headquarters offices (like NASA Orbital Debris Program Office at JSC) and other agencies. Contractors should be listed with their parent organization. *(Found in SMARTS)*

Initiator Information: Name, Phone, E-mail, Org, Signature, & Date	NASA management official initiating the request. Include the phone number, organization code, and e-mail. The request is considered as initiated after the official signs and provides the date in this block.
Adjudication Required: - Mandatory Reviewers

Scope of Risk: - Public Safety - Public Assets - NASA Personnel Safety - Contractor Personnel Safety - Flight - Ground - Software - Facility - Security	The fields in this block give the initiator's opinion as to who/what may be affected by the request if approved or not approved. Enter “Yes” or “No” for each. - Could the effect of the request go outside NASA (or surrounding USG property) to injure non-USG personnel or the general public? - Could the effect of the request go outside of the USG property and damage non-USG items (e.g., other spacecraft)? - Are NASA personnel (NASA employees) at risk? - Are Contractor (NASA contractors and other partner personnel) at risk? - Does the request involve spaceflight or aircraft flight? - Does the request involve ground support (spaceflight or aircraft flight)? - Does the request involve computer/processor software? - Does the request affect NASA (or other USG) facilities (structures or land)? - Does the request involve National Security issues (aka: security classification, USG protective security, or Department of Homeland Security issues)?
Risk Scope Items	List any items that are (or may be) effected by the request if approved or not approved. Please be specific and as complete as possible. If the items cover a physical area, please just state the area as all-inclusive. (e.g.; LC39B, VAB, GRC, LaRC Transonic Wind Tunnel)
Risk Scope Activities	List any activities or processes that are (or may be) effected by the request if approved or not approved. Please be specific and as complete as possible. If the items cover a set of activities/processes, please just state the process as all-inclusive. (e.g.; launch, budget cycle, lift of an Orbiter)
Risk Scope Personnel	List any persons or groups that are (or may be) effected by the request if approved or not approved. Please be specific and as complete as possible. If the items cover a set of people, please just state the group as all-inclusive. (e.g.; KSC, GSFC Code 300)
Request Summary	A brief summary of the request. Please keep to about 25 words or less.
Request Justification	A detailed explanation of the request. Please include a full text explanation of why the request is needed, why objectives cannot be accomplished without a relief request, and what is hoped to be achieved with issuing the relief.
Additional Information	Any information that will be helpful to NASA management not familiar with the specifics to understand why the request is needed or the background of other similar efforts needing (or not needing) requirements relief.
Risk Change	A quantification of the change in the risk associated with granting of the request. Please be specific and include any backup analysis as to how the risk was calculated. If there is NO change in risk, please explain why. Please include all risks defined in NPR 8000.4 (safety, performance, schedule, budgetary, etc.) that apply. The center SMA office should be assisting in the development of this response.

Risk Mitigation	A description of how any increase in risk will be (or can be) partially or totally mitigated. All requests with an increase in risk are required to provide this information (e.g.; increase signage, reduce the altitude, fly slower, and disburse workers). This data should also be included in the Mishap Contingency Plan if that is required for a mission or operation.
Risk Analysis Summary	A description of the net change in risk with the mitigation measures in place as compared to the system without the relief request being granted.
Attached Supporting Summary	List the documents that are attached to this request to aid a reviewer in knowing where to look for the supporting data. Please provide the necessary backup material to support the request. Remember, requests might not be reviewed and processed by personnel who are intimately familiar with your system. This supplemental material becomes a part of the official record of the relief requested. (Note: For the final approved relief request, the request is forwarded to OSMA for Agency-level storage. These documents will need to be sent along with the request. Electronic .pdf format is preferred.)

Section 2: Requirement Information	
** This block of information should be repeated for EACH paragraph for which relief is being requested**	
Paragraph	- The paragraph number (include all levels in the number) of the first requirement being requested for relief.
Requirement Identification	- Include the 5 digit ID number found in the requirements document for the primary (or first in most cases) requirement. This ID is also known as the SMARTS ID. The completed request will be filed against this SMARTS ID.
SMA Role	- Always use “L” (field reserved for future expansion of SMARTS)
Current Requirement Text	- Exact text from the requirement. For requirements that are not “complete thoughts” (e.g.; lists), include the higher level wording to make the requirement stand-alone. Note: SMARTS provides the ‘complete thought’ for each “shall” statement.
Proposed Requirement Text	- Exact text of the proposed requirement to be implemented. This requirement will become imposed on the requesting organization in place of the existing requirement. Remember that, like the original requirement, the new requirement should be specific as to who has the responsibility to perform the action and what action is to be performed including the quality evidence to assist management (and auditors) in knowing that the alternate requirement has been completed. (See NPR 1400.1 or HOWI 1400GD02 Appendix B for guidance on drafting a good requirement.) If the request is to make a paragraph not applicable, then enter “not applicable.” If relief is being requested for other individual paragraphs, copy the whole block and enter data for each paragraph. *Note: If relief is being requested for a contiguous series of paragraphs (to include a whole Chapter(s)), provide the first paragraph information as a stand-alone instance of this block, then enter a second instance of this block for the listing of the remainder of the series.* *(e.g.; for a request for Sections 3.1 through 3.5:* *Enter paragraph 3.1, Req ID: ## of that paragraph, SMA Role “L”, Requirement Text for paragraph 3.1 and the whole proposed text for the contiguous series*. In a second block enter: para is blank, Req ID is blank, SMA Role: “L”, Current Requirement Text: (a statement like: “Paragraphs 3.1 thru 3.5, inclusive are being requested for this waiver”).

Section 3: Review Signatures	
For each signature, the name is printed and the form is signed and dated. Either the "Concur" or "Reject" must be circled	For explanation of who is a mandatory reviewer, see the mandatory reviewer field in Section 1 above. *Note: Add as many lines as necessary to capture all of the review signatures. Do not use additional forms for other signatures like the NASA Form 184 or an Action Document Summary (NHQ Form 117) form.*

Section 4: Approval Signatures	
For the Chief, Safety and Mission Assurance TA signature, the name is printed and the form is signed and dated. Either the "Approve" or "Reject" is circled.	For explanation of who is a mandatory reviewer, see the mandatory reviewer field in Section 1 above. Note: The SMA TA signature signifies: The request has been properly filled out. The request is appropriate and in NASA's best interests. The change in risk is quantified and appropriate mitigation measures have been listed. All appropriate organizations and SMEs have reviewed the request. All concerns with the request have been documented.
For the risk acceptance signature, the name is printed and the form is signed and dated. Then one of the options is circled.	For explanation of who is a mandatory reviewer, see the mandatory reviewer field in Section 1 above. The risk acceptance NASA official must either be senior to the request initiator in Section 1 above, and senior to (or equivalent to) the person signing as the Lead TA, or a Mission Directorate Associate Administrator or higher. Note: The risk acceptance signature signifies: The request is appropriate and in NASA's best interests. The change in risk is noted and that the risk is being accepted on behalf of the personnel listed in Section 1 as involved and on behalf of the U.S. Government for USG property and personnel and the general public as noted in Section 1 above. All concerns with the request have been documented.

Section 5: Comments & Appeal
Both fields are free form comments as per the titles of the blocks. If an appeal is initiated the rationale must be entered in the Appeal block

A.2 OSMA Review of OSHA-related Requirements Relief Requests to Determine if They Can be Delegated

Note: Definitions of each field on the form are listed after the figure.

Figure 4: SMA TA Form #2:

TBD

A.3 Subject Matter Expert Review

Note: Definitions of each field on the form are listed after the figure.

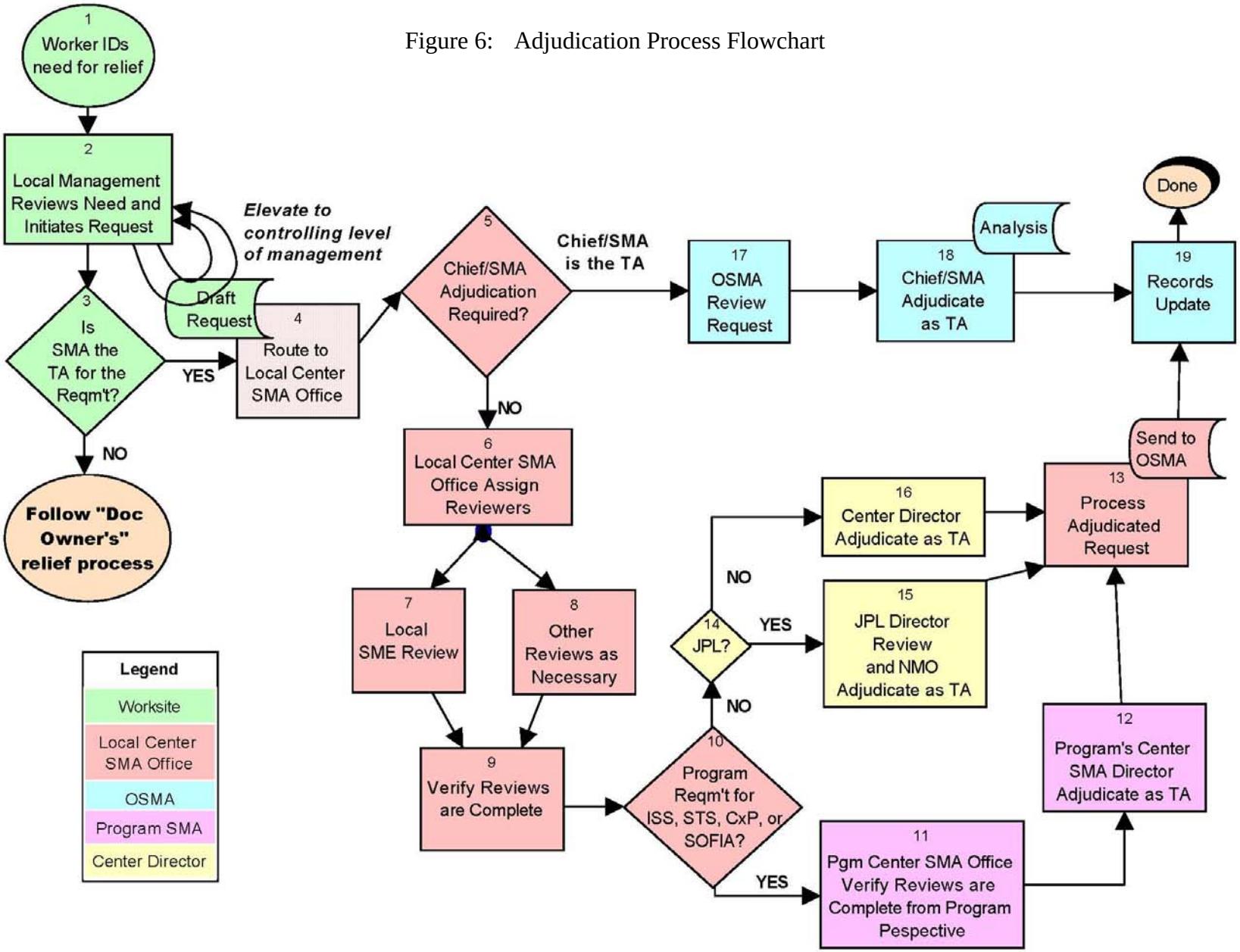
Figure 5: SMA TA Form #3:

TBD

APPENDIX B APPLICABLE PROCESS FOR ADJUDICATING REQUESTS FOR RELIEF

Appendix B provides an overview of the process used for adjudicating requests for relief from SMA TA requirements, specific process implementations by programs/projects/Centers will be documented in local process documents.

Figure 6: Adjudication Process Flowchart



General notes on interpreting the process:

(1) In the process step explanation, the format is that in the first line of the step, the person/office responsible for the step is listed first, and then the title of the step is given.

*(2) The label * SMARTS * indicates that upon clicking on the hotlink "(Requirement xxxxx)" at the end of a requirement in an OSMA requirements document (NPD/NPR/NASA-STD), the user will be guided through the relief request process. Hotlinks have been inserted in most of the OSMA requirements documents in NODIS (NASA On-Line Directives Information System), START (Standards and Technical Assistance Resource Tool), and documents accessed from the OSMA website.*

After the hotlink is clicked, a report will be displayed showing a summary of the meta-data stored in SMARTS for the requirement. At the bottom of the report is a hotlink to initiate a relief request. After clicking on that hotlink, the user will be taken to SMARTS and will be guided through the relief request process and SMARTS will provide a pre-populated Relief Request Form for the user to process.

Step 1 Worker Worker IDs Need for Relief

A worker identifies that the work cannot be performed to the applicable requirements and relief is needed from a NASA SMA requirement(s) at any level of work. For requests for relief that are initiated at a worksite and elevated to a higher level of a program/project/element, this worker could be the project/element manager overseeing that work. The lowest level of the requirement for which relief is needed and the organization who levies/controls the requirement should be identified first.

Step 2 Worker & Management

Local Management Reviews Need and Initiates Request

(1) The worker discusses the need for relief with his supervisor and management. If the supervisor concurs that relief is needed, the parentage of the requirement needs to be identified to determine if the requirement is directed from the parent and if the needed relief would require relief from this higher-level requirement(s) as well.

Note: A parent requirement is a requirement that drives a lower level requirement to exist. The parent requirement may reside in the same document, a more senior document at the same level of work, or a document controlled/levied by a senior/controlling organization. A lower level requirement may have one or many parent requirements and a parent requirement may drive one or many subordinate requirements.

(2) If there is no identifiable parent, then the requirement levying/controlling organization should be contacted for processing the request for relief. (See local procedures for adjudication.)

(3) If the relief request for the lower level requirement is within the scope of the higher-level requirement, then a request for relief is not needed from the higher controlling organization and the organization controlling the lower level requirement would adjudicate the request. (See local procedures for further direction on this type of relief request adjudication.) Copies of these requests when adjudicated should be forwarded to the organization establishing the parent requirement.

(4) If the lower level requirement relief request would also require a relief request from a parent requirement, then the above process is repeated for the parent requirement to identify its parent(s). The relief request adjudication for this level should be contacted for proper processing. This step would continue to be repeated for higher-level requirements until the highest-level requirement needing a relief request is within the documents described in paragraph 4.3, and then the Center SMA office should be contacted to assist with the process that continues with Step 3 below.

Note: Assistance for processing a request for relief from an SMA requirement can be obtained by contacting the local SMA office. In addition, if the request is being made at/for NASA Headquarters, then the OSMA should be contacted for assistance (performing the role as the local SMA office).

Note: The circular arrows on steps 2/3/4 indicate that the process may go through several iterations before finalizing step 4.

Note: The local process used for requests for relief from any NPD or NPR must contain all of the information required by NPR 1400.1, paragraph 4.2. The OSMA Relief Request Form (see Appendix A, paragraph A.1) contains this mandatory subset of information.

(5) Signing the form indicates that the origin of the request has been determined.

Step 3 Work Management Is SMA the TA for the Requirement?

* SMARTS *

The manager responsible for the work (with the Center SMA office) reviews the requirement to see if it is a requirement where SMA is the lead TA for the requirement. Those are generally requirements contained in a document described in paragraph 4.3.

If SMA is not the lead TA ("no") then the request is forwarded to the "owner" or TA (POC) for the requirement (or the document) and the process described in this document is concluded.

If SMA is the lead TA ("yes"), then the request is initialed by the manager of the work who is requesting the relief, and the relief request is forwarded to the local Center SMA office for further processing in Step 4.

Note: For requests from within NASA Headquarters or outside of a NASA Center or contract controlled by a NASA Center, the request is forwarded to OSMA for processing as the "local Center SMA office" for the purpose of the request.

Step 4 Local Center SMA Office (Requirement Relief Coordinator)
* SMARTS * Route to Local Center SMA office.

Note: Each NASA SMA office should have a person designated to receive/process/assist with requirements relief requests.

The Center SMA Requirement Relief Coordinator works with the worker/management in completing the relief request form and gathering the backup/supporting materials. When the request is completed, the relief request is signed by the management official to officially initiate the relief request. The Local Center SMA Requirement Relief Coordinator (with any supporting documentation in paper and electronically) begins the internal Center SMA office review.

Step 5 Local Center SMA Director Chief, Safety and Mission Assurance
Adjudication Required?

* SMARTS * If any of the requirements being requested for relief are NOT authorized for adjudication delegation (see paragraph 4.3) then the request is forwarded to the Requirements Manager within OSMA (and the process continues with Step 17).

Otherwise, the process continues with Step 6 within the local Center SMA office.

Step 6 Local Center SMA Requirement Relief Coordinator Assign Reviewers

The local Center SMA Requirement Relief Coordinator determines what reviews are needed/required (Steps 7 & 8) and makes assignments/requests for those persons to review and comment on the relief request. The form used for the relief request is signed by each official reviewer (editorial reviewers do not need to sign) and their comments are typed and added to the request.

Two types of reviews are required for all requests.

* SMARTS * (Type 1) The SMA SME is required to perform a technical review of the request (Step 7). The purpose of the SME review is to determine/evaluate:

- The SMA risk(s) associated with the request,
- The technical adequacy, correctness, and completeness of the request,
- The technical adequacy and appropriateness of the revised requirement and the identified risk mitigation measures,
- The backup/supporting technical material needed for further processing of the request.

* SMARTS * (Type 2) Review(s) by other technical and management personnel to ensure that all necessary and appropriate organizations have been afforded the opportunity to review the request (Step 8). The purpose of this review(s) is to determine/evaluate:

- The adequacy, correctness, and completeness of the request from the viewpoint of the community they are representing
- The other backup/supporting material needed for further processing of the request.
- * SMARTS * Additionally, the Chief, Safety and Mission Assurance may designate requirements (NPD/NPR/NASA-STD) which can be delegated per this document, but require a SME review by OSMA.
- All reviewers shall provide a written evaluation of the request, which is included as a part of the request package (Requirement).

Step 7 NASA SME Full SME Review

The local SMA office tasks the SMEs to perform the review described in Step 6 (Type 1 reviews). The SMA office is responsible for ensuring that the request is thoroughly reviewed by the technically best personnel available within NASA.

Each SME shall provide a written evaluation of the request and sign the request indicating recommendation for SMA TA concurrence/rejection (Requirement).

The request review form is signed at a minimum by two people from each involved TA: one signature that the risk has been reviewed and is properly quantified and qualified; a second signature is that the request is within NASA policy (management review).

Step 8 Other Reviewer(s) Other Reviews as Necessary

(1) The local SMA office tasks additional persons/organizations to perform the review described in Step 6 (Type 2).

(2) Each reviewer shall provide a written evaluation of the request and sign the request indicating recommendation for concurrence/rejection on behalf of their organization/office (Requirement). This may include a contracting office, legal, engineering, health/medical, or planetary protection.

Step 9 Local Center SMA Requirement Relief Coordinator
Verify Review is Complete

The local Center SMA Requirements Relief Coordinator ensures that all of the reviews performed are complete (Steps 7-8) and done with high quality and that all endorsements/evaluations are contained with the request. The relief request form is noted as complete. The request is then forwarded through the SMA office management (as determined by local procedures) to obtain an overall recommendation for TA concurrence/rejection.

Note: During the final review, any changes needed to Center policy or procedures documents should be initiated such that implementation delays for the relief request will be minimized.

Step 10 Local Center SMA Director Program Requirement for ISS, STS, CxP, or SOFIA?

If the requirement is part of the programmatic responsibility of the "Level 1" or "Level 2" part of these listed programs (or any other Tightly Coupled Programs as defined by NASA Governance) and relief requires adjudication at Level 2, additional review is necessary.

- For an ISS, STS, or CxP request for relief from programmatic requirement(s) (vice institutional requirement(s)), the request is forwarded to that program's Chief Safety and Mission Assurance Officer (CSO) at JSC. (Continue with Step 11)
- For the SOFIA Program and other Tightly Coupled Programs, the request for relief from a programmatic requirement is forwarded to the Director of the Program's Center SMA office. (Continue with Step 11)

* SMARTS * For requests for relief from institutional requirements, the processing continues within the Local SMA office with Step 14.

Step 11 Program Center SMA Office Verify Request for Relief

The SMA office at the Tightly Coupled Program's hosting Center reviews the request for relief from a program perspective to ensure that all program level considerations, concerns, and risk mitigations have been addressed in the request. If the request was already being processed by JSC SMA (for ISS/STS/CxP) or DFRC SMA (for SOFIA), then the reviews done in steps 6-9 are adequate for this step except that the program's CSO review must be added as a mandatory reviewer. However, in all requests, this Center SMA office may request that additional reviews be done.

The request for relief is updated with the written evaluation of the Program-Level CSO that shall be included with the request (Requirement).

Step 12 Program Center SMA Director Adjudicate as TA.

The request is reviewed by the Program Center SMA Director. The Program Center SMA Director decides if:

- the request is warranted,
- the risk is properly quantified,
- mitigation measures are adequate and accurately documented,
- all necessary reviewers have reviewed the request and provided written reports of their reviews.

Then, the Center SMA Director signs the request approving or disapproving the request.

Step 13 Center SMA Requirement Relief Coordinator Process Adjudicated Request

The Center SMA Relief Coordinator shall:

- File the official completed request (and all associated review reports) in accordance with local records management procedures. If the request is stored in a data system other than in the Center SMA office files, that fulfills this paragraph's requirement if the Center SMA office has full access to the completed request.
- Forward a copy of the completed request (and all associated review reports) back to the originator (NASA management official signing the request form in Step 4) for implementation.
- If the request involves an NPD, NPR, or an SMA NASA-STD, the request and all associated supporting documentation is forwarded as an electronic and a paper copy to the OSMA Requirements Manager. For requirements stored outside of the Center SMA office, then providing a hotlink to the stored request fulfills this paragraph's requirement.
- Go to Step 19. If the requirement is not required to be sent to OSMA, then the process is complete after local filing

Step 14 Center Director JPL?

If the request originated from or was processed through the JPL, or the work will be done at/by JPL under the JPL contract, then the request is forwarded per Step 15. Otherwise, continue processing with Step 16.

Step 15 NMO JPL Director Review and NASA Management Office (NMO) Adjudicate as TA

(1) The request is reviewed and signed by the JPL SMA Director acknowledging that the risk is properly quantified and the request documentation is complete.

(2) Next the request is reviewed and signed by the JPL Director. This signature implies that a change in the requirement either is within the contractual limits of JPL or will require a contractual change. This signature also implies that the JPL Director will accept the increased risk to NASA and JPL personnel, hardware, and facilities after the request is approved by the NMO (substep 15-3) below.

(3) Requests for relief from institutional requirements are forwarded to the NMO for JPL for adjudication. The final adjudication shall contain a statement stating whether the request is outside of the JPL contract and shall include any contractual waivers.

(4) The process continues with the NMO forwarding the adjudicated request to OSMA as in Step 13.

Step 16 Center Director Adjudicate as TA.

The request is reviewed by the Center SMA Director for proper quantification and risk mitigation measure planning and to ensure that all necessary reviewers have reviewed the request. Then the request is forwarded to the Center Director for adjudication. The Center Director decides if:

- The request is warranted,
- The risk is properly quantified,
- Mitigation measures are adequate and accurately documented, and
- All necessary reviewers have reviewed the request and provided written reports of their reviews.

Then, the Center Director signs the request approving or disapproving the request. The Center Director sends the request to the Center SMA office.

Step 17 OSMA Requirements Manager OSMA Review of Request

SMARTS (1) The OSMA Requirements Manager performs a review of the request and requests/directs other reviews as needed (either inside OSMA, outside of OSMA within NASA, or persons outside of NASA (example: OSHA)).

Note: This step is similar to the work performed in steps 6-9 except reviews are done with an Agency-level perspective. Requests that involve requirements that are directed upon NASA will require OSMA to negotiate with the requirement originator, Office of External Relations, and NASA General Counsel prior to adjudication. These negotiations can take several months to complete.

All reviews/negotiations are documented as a part of the relief request. A determination will be made (and documented) by the OSMA Requirements Manager that:

- The request is complete,
- All necessary reviews have taken place and been documented,
- All mitigation measures being planned are complete and documented,
- Any further changes needed to Agency-level documents (such as NPD, NPR, NASA-STD, NASA-HDBK, …) are initiated per OSMA Headquarters Office Work Instruction 1400-GD02.

(2) At this point, it is determined whether the requirement can be delegated for adjudication based on the OSMA review. If it can be delegated then the "SMA TA Relief Request Review Form 2" [TBD] is completed and the request is returned to the appropriate Center SMA office to continue the adjudication process at Step 6. Otherwise, the request package is submitted to the Chief, Safety and Mission Assurance for review/adjudication in Step 18.

Note: During the final review, any changes needed to Agency or Headquarters policy or procedures documents should be initiated such that implementation delays for the relief request will be minimized.

Step 18 Chief, Safety and Mission Assurance Adjudicate as TA

The Chief, Safety and Mission Assurance, as the final authority representing the NASA TA, makes a determination on the technical merit, risk quantification, and acceptability of the request.

(1) If the Chief, Safety and Mission Assurance is the adjudicating authority: The Chief, Safety and Mission Assurance signs the request and circles either "grant" or "deny" on the request. The review process may be done informally or formally with a Safety and Mission Success Review (per NPR 8705.6, NASA Procedural Requirements for Safety and Mission Assurance (SMA) Audits, Reviews, and Assessments, Chapter 4).

(2) If the request requires adjudication to be done by the NASA Associate Administrator (or other senior NASA official): the Chief, Safety and Mission Assurance annotates the request with his recommendations and then the request is forwarded to that official for final adjudication with the Chief, Safety and Mission Assurance's recommendation.

* SMARTS * After adjudication, the request is returned to the OSMA Requirements Manager for final processing per HOWI 8700-Q04 (this process is much like the work done in steps 6-9). The adjudicated request is then forwarded back to the requesting manager (Step 2/4) with a copy to the appropriate Mission Directorate POC.

Note: If the Chief, Safety and Mission Assurance rejects/denys the request, the initiating manager (Step 2/4) (or senior management official) may appeal the adjudication. The request is annotated as to the reason why the appeal is being submitted and then is forwarded to the NASA Associate Administrator for adjudication (per NPD 1000.3). After adjudication of appealed requests, the completed request is returned to the Chief, Safety and Mission Assurance and then the OSMA Requirements Manager for processing as described earlier in this step.

Step 19 OSMA Requirements Manager Update Records

* SMARTS * The OSMA Requirements Manager updates the SMARTS/START/OSMA Website systems with the relief information and files the request. (This OSMA work is done per HOWI 8700-Q004, Processing SMA Variance Requests.)

- Provide the adjudicated NPD and NPR relief requests to NODIS for storage.

The process is closed after all above filing is complete.

Note: If the request for relief was disapproved in Steps 12, 15, or 16, then the NASA Management Official (Step 4) making the request (or senior) may elevate the request per the NASA Appeal Process (see NPD 1000.3). If the request was already adjudicated by:

- *The Center SMA Director (Step 12), the request must be elevated up the program/project management chain to the sponsoring Mission Directorate Associate Administrator who will re-initiate the request at step 4.*

- *The NMO or Center Director (Step 15), the request must be elevated up the program/project management chain to the sponsoring NASA Headquarters Official responsible for the work (which may be as senior as the NASA Associate Administrator) who will re-initiate the request at step 4.*

* SMARTS *

- *All requests for review that are appealed to NASA Headquarters are adjudicated via the Chief, Safety and Mission Assurance in steps 17 and 18 who will either adjudicate the request or request adjudication from the NASA Associate Administrator.*

The process is complete when the filing per Table 1 is done.

Table 10: Quality Records

Record ID	Owner	Location	Media Electronic /hardcopy	Schedule Number & Item Number	Retention & Disposition
Completed Relief Request (with all supporting materials and signatures and reviews)	Center SMA Office or OSMA	Center SMA Office or OSMA	Hardcopy (with original signatures) is maintained by OSMA for requests signed by Chief, Safety and Mission Assurance, or by Center SMA offices for all delegated requests. Electronic copy maintained by all involved SMA offices.	Schedule: 8 Item 101	*** Permanent *** Transfer to National Archives and Records Administration (NARA): - 7 years after disestablishment of SMA as an OPR and - 3 years after program/project close.

APPENDIX C DOCUMENTS TO WHICH THIS PROCESS APPLIES

C.1 NASA Documents

NASA Policy Directives

- NPD 8700.1, NASA Policy for Safety and Mission Success
- NPD 8700.3, Safety and Mission Assurance (SMA) Policy for NASA Spacecraft, Instruments, and Launch Services
- NPD 8710.5, Policy for Pressure Vessels and Pressurized Systems
- NPD 8720.1, NASA Reliability and Maintainability (R&M) Program Policy
- NPD 8730.1, Metrology and Calibration
- NPD 8730.2, NASA Parts Policy
- NPD 8730.5, NASA Quality Assurance Program Policy

Note: NPD 8710.1 and NPR 8715.2 are not a part of the SMA TA and hence, the process does not apply.

NASA Procedural Requirements

- NPR 8000.4, Agency Risk Management Procedural Requirements
- NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping
- NPR 8705.2, Human-Rating Requirements for Space Systems
- NPR 8705.4, Risk Classifications for NASA Payloads
- NPR 8705.5, Technical Probabilistic Risk Assessment (PRA) Procedures for Safety and Mission Success for NASA Programs and Projects
- NPR 8705.6, Safety and Mission Assurance Audits, Reviews, and Assessments
- NPR 8715.1, NASA Occupational Safety and Health Programs
- NPR 8715.3, NASA General Safety Program Requirements
- NPR 8715.6, NASA Procedural Requirements for Limiting Orbital Debris
- NPR 8735.1, Procedures for Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program and NASA Advisories
- NPR 8735.2, Management of Government Quality Assurance Functions for NASA Contracts

Note: This process does not apply to: NPR 8715.5, Range Safety Program, NPR 8715.7, Expendable Launch Vehicle Payload Safety Program, or NASA-STD-8719.8, Expendable Launch Vehicle Payload Safety Review Process (this document was cancelled).

NASA Standards

- NSS-1740.12, Safety Standard for Explosives, Propellants, and Pyrotechnics
- NSS-1740.14, Guidelines and Assessment Procedures for Limiting Orbital Debris
- NASA-STD-2202.93, Software Formal Inspections Standard
- NASA-STD-8709.2, NASA SMA Roles and Responsibilities for ELV Services
- NASA-STD-8719.7, Facility System Safety Guidebook
- NASA-STD-8719.9, Standard for Lifting Devices and Equipment
- NASA-STD-8719.10, Standard for Underwater Facility and Non-Open Water Operations
- NASA-STD-8719.11, Safety Standard for Fire Protection
- NASA-STD-8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics
- NASA-STD-8719.13, Software Safety Standard
- NASA-STD-8719.14, Process for Limiting Orbital Debris
- NASA-STD-8719.17, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PV/S)
- NASA-STD-8729.1, Planning, Developing and Managing an Effective Reliability and Maintainability (R&M) Program
- NASA-STD-8739.1, Workmanship Standard for Polymeric Application on Electronic Assemblies
- NASA-STD-8739.2, Workmanship Standard for Surface Mount Technology
- NASA-STD-8739.3, Soldered Electrical Connections
- NASA-STD-8739.4, Crimping, Interconnecting Cables, Harnesses, and Wiring
- NASA-STD-8739.5, Fiber Optic Terminations, Cable Assemblies and Installation
- NASA-STD-8739.8, Software Assurance Standard

C.2 Other Documents

The process defined in this document also applies to any NASA, national, international, or industry standard that is listed as a “Mandatory Standard” on the OSMA Website at: http://www.hq.nasa.gov/office/codeq/doctree/Mandatory_by_Called.pdf