



NPD 8700.1C
Effective Date: October 13, 2002
Expiration Date: October 18, 2007

COMPLIANCE IS MANDATORY

[Printable Format \(PDF\)](#)

Request Notification of Change (NASA Only)

Subject: NASA Policy for Safety and Mission Success

Responsible Office: Office of Safety and Mission Assurance

1. POLICY

It is NASA policy to--

- a. Protect the public, Astronauts and pilots, NASA workforce, and high-value equipment and property from potential harm as a result of NASA activities and operations by providing safe programs, technologies, operations, and facilities; and protect the environment ([Requirement 1003](#)).
- b. Hold NASA leaders, managers, supervisors, and employees accountable for safety and mission success within their functional areas of responsibility ([Requirement 1061](#)).
- c. Establish and maintain independent lines of communications for unrestricted flow of information concerning Safety and Mission Assurance (SMA), risks, or other matters affecting the ability to meet the mission-success criteria ([Requirement 1006](#)).
- d. Define and document both SMA requirements and safety and mission-success criteria in NASA programs and projects as a foundation for the design and development of safe and reliable program hardware and software ([Requirement 1062](#)). All solicitation instruments (announcements of opportunity, cooperative agreements, requests for proposals, or other) will require prospective providers to identify and describe SMA and Risk Management (RM) approaches (where appropriate) and how the risk factors will be managed ([Requirement 30884](#)).
- e. Verify and validate life-cycle implementation of SMA, RM, and mission-success requirements through ongoing surveillance of program, project, and contractor processes ([Requirement 1063](#)).
- f. Certify the safety and operational readiness of flight hardware/software, mission-critical support equipment, hazardous facilities/operations, and high-energy, ground-based systems through formal review processes ([Requirement 1064](#)).
- g. Fully address safety and mission success concerns, risks and risk acceptance, and appropriate lessons learned at all management committee reviews, other major milestone review activities, and operational readiness reviews ([Requirement 1065](#)).
- h. Implement structured RM processes and use qualitative and quantitative risk-assessment techniques to make decisions regarding safety and the likelihood of mission success ([Requirement 1066](#)).

i. Report and track to resolution all corrective actions resulting from investigations of mishaps, incidents, nonconformances, and anomalies; and distribute and use lessons learned to improve activities and operations ([Requirement 1067](#)).

2. APPLICABILITY

This NPD applies to NASA Headquarters and NASA Centers, including Component Facilities, and to JPL to the extent specified in its contract.

3. AUTHORITY

42 U.S.C. 2473(c)(1), Section 203(c)(1) of the National Aeronautics and Space Act of 1958, as amended.

4. REFERENCES

- a. 29 U.S.C. 668, Section 19 of the Occupational Safety and Health Act of 1970, as amended.
- b. Executive Order 12196, Occupational Safety and Health Programs for Federal Employees, dated February 26, 1980, 3 CFR (1980 Compilation), as amended, 5 U.S.C. 7902 (note).
- c. 29 CFR 1960, Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters.
- d. 48 CFR Section 1815.203 (NASA FAR Supplement Section 1815.203).
- e. NPD 1000.1, NASA Strategic Plan.
- f. NPD 1600.2, NASA Security Policy.
- g. NPD 2810.1, Security of Information Technology.
- h. NPD 2820.1, NASA Software Policies.
- i. NPD 7120.4, Program/Project Management.
- j. NPD 8700.2, NASA Policy for Safety and Mission Assurance (SMA) for Experimental Aerospace Vehicles (EAV).
- k. NPR 1000.2, NASA Strategic Management Handbook.
- l. NPR 8621.1, NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping.
- m. Safety and Mission Assurance Requirements Tree, <http://www.hq.nasa.gov/office/codeq/doctree/qdoc.htm>.
- n. Safety and Mission Assurance Functional Leadership Plan, Office of Safety and Mission Assurance, July 11, 2000.

5. RESPONSIBILITY

- a. Each NASA organizational element shall allocate and maintain

appropriate levels of authority, funding, and training necessary to achieve compliance with the policies set forth above (Requirement 1013).

b. The Mission Directorate Associate Administrators are responsible for the safety and mission success of their programs, projects, and activities (Requirement 1028). To accomplish this, each Mission Directorate Associate Administrator shall--

(1) Provide executive leadership in implementing Agency Safety, Reliability, Maintainability, and Quality (SRM&Q) and RM policies, plans, techniques, procedures, and standards throughout all programs, projects, and activities (Requirement 1068).

(2) Ensure that safety and mission-success requirements are defined for all programs and projects and that a process for recurrence control of problems is accomplished through a closed-loop corrective and preventive action system (Requirement 1069).

(3) Establish policies and procedures for formal reviews for the certification of programs, projects, and activities as detailed in paragraph 1.f (Requirement 1070).

(4) Coordinate with the responsible Mission Support Offices, Functional Support Offices, and Administrator Staff Offices to ensure that domains of potential risk (information management, environment, security, legal) are properly included in RM plans (Requirement 1071).

(5) Serve as the ultimate risk acceptance/disposition official for programs, projects, and activities (Requirement 1072).

(6) Reserved.

(7) Reserved.

(8) Direct the suspension of any activity that presents either a present hazard (imminent danger or future hazard to personnel, property or mission operations due to unsafe acts or conditions that might be identified by either inspection or analysis (Requirement 34236).

c. The Chief Safety and Mission Assurance Officer shall--

(1) Reserved.

(2) Provide SRM&Q and RM expectations and evaluations at Program Management Committee activities and other major program milestone reviews (Requirement 1017).

(3) (a) Reserved. (b) Review and concur with each Center's SMA Annual Operating Agreement (Requirement 44004) ; (c) Reserved; (d) Ensure that each Center has designated an SMA functional manager (Requirement 44006) ; and (e) Provide SMA input to performance planning and annual performance evaluations for Mission Directorate Associate Administrators, Center Directors, and Center SMA functional managers (Requirement 44007).

(4) Direct the suspension of any activity that presents either a present hazard (imminent danger) or future hazard to personnel, property, or mission operations due to unsafe acts or conditions that might be identified by either inspection or analysis (Requirement 1018).

(5) Reserved.

(6) Establish review processes to certify the safety and operational readiness of flight hardware/software, mission-critical support equipment, hazardous facilities/operations, and high-energy ground-based systems (Requirement 1075).

(7) Participate in selected certification reviews established by the Mission Directorate Associate Administrators (Requirement 1076).

(8) Reserved.

(9) Direct and oversee (in coordination with the appropriate Mission Directorate Associate Administrators) the prompt and accurate reporting, investigating, and analyzing of all NASA mishaps and close calls, including closure of problems, nonconformances, and anomalies, and assure the collection, retention, and communication of their lessons learned as one means of recurrence control ([Requirement 1024](#)).

(10) Formulate and direct SRM&Q education, training, and career development programs to enable SMA staff, program/project management, senior Agency management, and the NASA workforce to obtain the understanding of SRM&Q principles, tools, methods, and standards necessary to successfully perform their functions ([Requirement 1078](#)).

(11) Reserved.

(12) Reserved.

(13) Reserved.

(14) Reserved.

(15) Support the development and rapid transfer of new SMA technologies, processes, and methodologies to various market sectors and Government agencies ([Requirement 1025](#)).

(16) Reserved.

(17) Review all emergency planning as part of the office of Safety and Mission Assurance review processes to ensure compliance with the Occupational Safety and Health Administration requirements in 29 CFR 1960, 29 CFR 1910, Worker Safety and Health Annex of the National Response Plan ([Requirement 34517](#)).

d. The Center Directors are responsible for the safety and mission success of their activities and operations ([Requirement 1032](#)). To accomplish this, each Center Director shall--

(1) Maintain the safe and successful functioning of facilities and operations, use lessons learned to improve operations and activities, and prevent recurrence of undesired events through a closed-loop corrective action process ([Requirement 1083](#)).

(2) Implement Agency SRM&Q policies, plans, techniques, procedures, and standards and ensure that safety and mission-success requirements are established for Center operations and activities ([Requirement 1033](#)).

(3) Serve as the final risk acceptance/disposition official for Center activities ([Requirement 1084](#)). Assure that any delegation of this authority is performed based on an assessment of the frequency of occurrence and the severity of the risk ([Requirement 30885](#)).

(4) Designate a manager for SMA to serve as the leader and focal point for the Center's SMA activities ([Requirement 1034](#)).

(5) Staff Center SMA organizations with qualified SRM&Q and RM professionals ([Requirement 1036](#)).

(6) Develop and approve the Center's SMA Annual Operating Agreement ([Requirement 1035](#)).

(7) Direct the suspension of any activity that presents either a present hazard (imminent danger) or future hazard to personnel, property, or mission operations due to unsafe acts or conditions that might be identified by either inspection or analysis ([Requirement 34237](#)).

e. Program and project managers are responsible for the safety and mission success of their program/projects (Requirement 1037). Program and project managers shall--

(1) Implement Agency SMA and RM policies, guidelines, and standards and establish safety and mission-success requirements within their programs and projects (Requirement 1039).

(2) Develop, in coordination with the responsible Center SMA functional manager(s), the program and project RM plans; establish/maintain a mission-risk profile; and serve as the final risk acceptance/disposition official for activities within their program/project (Requirement 1040).

(3) Coordinate with the responsible Mission Support Offices, Functional Support Offices, and Administrative Staff Offices to ensure that other domains of potential risk (information management, environment, security, legal) are properly included in RM plans (Requirement 1041).

(4) Use and distribute lessons learned to enhance the probability of mission success and establish recurrence control through a closed-loop corrective/preventative action system (Requirement 1085).

(5) Designate an individual with specific responsibilities for coordinating/executing SMA efforts within the program/project (Requirement 1086).

f. The Center SMA functional managers shall--

(1) Provide local SMA executive leadership and policy implementation direction for Center-level projects and operations (Requirement 1087).

(2) Serve as the Center focal point for the alternative, independent SMA line of communication (Requirement 1044).

(3) Assure that effective and efficient SMA processes are in place to enhance the potential for success of NASA programs, projects, and activities at the Center level (Requirement 1047).

(4) Conduct surveillance and independent assessments to enhance (a) the success of programs, projects, and activities; and (b) the effectiveness of SMA activities (Requirement 1048). This includes overseeing any SMA activities managed by other organizations, such as aviation safety, lifting safety, pressure-systems safety, firefighting, and emergency response. (For a list of typical SMA activities and program elements, see Attachment A.)

(5) Direct the suspension of any activity that presents either a present hazard (imminent danger) or future hazard to personnel, property, or mission operations due to unsafe acts or conditions that might be identified by either inspection or analysis (Requirement 1088).

(6) Review, in coordination with their Center's program and project personnel, SMA, and RM plans for the programs and projects at the Center (Requirement 1089).

(7) Provide support to projects and programs by performing hazards analyses and SMA assessments in support of project and program needs (Requirement 1090).

(8) Provide SMA expectations and evaluations to local Governing Program Management Committee activities (Requirement 1091).

(9) Assist the Center Director in formulating the Center SMA Annual Operating Agreement (see paragraph 5.d(6)) (Requirement 1045).

(10) Provide the SMA products and services agreed to in the applicable SMA Annual Operating Agreement (Requirement 1046).

(11) Assure the prompt and accurate reporting, investigating, tracking, and closure of all mishaps, close calls, problems, nonconformances, and anomalies within the Center's jurisdiction (Requirement 1092). This includes collection and retention of lessons learned as one means of recurrence control.

(12) Identify the need for and support the development of new SRM&Q and RM tools, techniques, and processes (Requirement 1093).

g. The Director, Office of Headquarters Operations, is responsible for the operational safety program at Headquarters (Requirement 1094). The Director shall--

(1) Maintain the safe and successful functioning of facilities and operations, use lessons learned to improve operations and activities, and prevent recurrence of undesired events through a closed-loop corrective action system (Requirement 1095).

(2) Implement Agency safety policies, plans, techniques, procedures, and standards and ensure that safety requirements are established for Headquarters operations (Requirement 1096).

(3) Direct the suspension of any activity that presents either a present hazard (imminent danger) or future hazard to personnel, property, or mission operations due to unsafe acts or conditions that might be identified by either inspection or analysis (Requirement 1097).

(4) Serve as the final safety risk acceptance/disposition official for Headquarters activities (Requirement 1098).

(5) Designate a safety manager to serve as the leader and focal point for the Headquarters safety activities (Requirement 1099).

(6) Reserved.

h. Supervisors and managers are responsible for educating their employees on the hazards of their job, establishing and promoting safe work practices, instilling in employees the importance of safety and mission success, and implementing safety and mission success regulations (Requirement 1101).

i. Employees are responsible for understanding the safety and mission-success requirements of their organization, performing their tasks in accordance with established safety procedures, and using prescribed personal protective equipment (Requirement 1102).

6. DELEGATION OF AUTHORITY

None.

7. MEASUREMENTS

None.

8. CANCELLATION

NPD 8700.1, NASA Policy for Safety and Mission Success, dated June 12, 1997.

Revalidated 03/22/2006, original sign by

**/s/ Sean O'Keefe
Administrator**

ATTACHMENT A: (TEXT)

Typical SMA Program Elements

Advisories
Alerts (GIDEP)
Emergency preparedness
Independent assessment (SMA)
ISO 9000
Lessons learned
Maintainability SMA engineering
Metrics (SMA)
Metrology and calibration
Mishap reporting and investigating
NASA Engineering and Quality Audit (NEQA)
Orbital debris
Personal protective equipment
Process-Based Mission Assurance (PBMA)
Procurement assurance
Quality assurance
Quality engineering
Quality management
Quality, parts
Quality, software
Quality, surveillance
Quality, workmanship
Reliability engineering
Reliability, human
Reliability management
Reliability, software
Reliability-centered maintenance
Risk assessment
Risk management (RM)
Safety management
Safety, aviation
Safety, confined spaces
Safety, cryogenic
Safety, electrical
Safety, explosives, propellants, and pyrotechnics
Safety, extravehicular activity (EVA)
Safety, facility
Safety, fire
Safety, hazardous materials
Safety, hazardous operations
Safety, hydrogen
Safety, inert gas
Safety, ionizing radiation
Safety, lockout/tagout
Safety, lifting devices
Safety, motor vehicle
Safety, nitrogen
Safety, non-ionizing radiation
Safety, nuclear (re: launching radioactive materials)
Safety, oxygen

Safety, payload
Safety, pressure vessel
Safety, promotion & motivation
Safety, range
Safety, software
Safety, system
Safety, test operations
Safety training
Safety, underwater facilities
SMA management

SMA definitions

Annual Operating Agreement (AOA). A NASA Center SMA management plan which defines customer requirements, SMA processes, resources required to meet SMA customer requirements, and the metrics defining effectiveness and efficiency of SMA processes.

NASA operation. Any activity or process that is under NASA direct control or includes major NASA involvement. (from NPR 8621.1).

(URL for Graphic)

DISTRIBUTION: **NODIS**

This Document Is Uncontrolled When Printed.
Check the NASA Online Directives Information System (NODIS) Library
to Verify that this is the correct version before use: <http://nodis3.gsfc.nasa.gov>
