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NASA Procedural Requirements

COMPLIANCE IS MANDATORY**NPR 8715.3C**Effective Date: March 12,
2008Expiration Date: November
12, 2016[Printable Format \(PDF\)](#)

Request Notification of Change (NASA Only)

Subject: NASA General Safety Program Requirements (w/Change 9 dated 2/08/13)**Responsible Office: Office of Safety and Mission Assurance**

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Preface

P.1 Purpose

- a. This NASA Procedural Requirements (NPR) provides the basis for the NASA Safety Program and serves as a general framework to structure more specific and detailed requirements for NASA Headquarters, Programs, and Centers. This document does not stand alone and is to be used in conjunction with the references listed in paragraph P.4.
- b. This NPR is directed toward safety requirements and to augment requirements for occupational health and environmental health of personnel and activities. Some health and environmental safety references are included to assist Center safety personnel in interactions with occupational health and environmental personnel. Occupational safety and health requirements that implement 29 CFR Part 1960, Basic Program Elements for Federal Employees, Occupational Safety and Health Programs and Related Matters, are specified in NPR 8715.1, NASA Occupational Safety and Health Programs. Environmental requirements are specified in NPD 8500.1, NASA Environmental Management.
- c. This NPR does not provide requirements for emergency planning. Emergency planning requirements are specified in NPD 8710.1, Emergency Preparedness Program.
- d. To address special processes and/or discipline-unique processes, the Office of Safety and Mission Assurance publishes standards that provide specific instructions that are beyond the scope and detail of this document. A listing of applicable Federal requirements, NPRs, and standards can be found in paragraphs P.3 and P.4 of this NPR.

P.2 Applicability

- a. This NPR is applicable to NASA Headquarters and NASA Centers including Component Facilities, and Technical and Service Support Centers. This NPR applies to the Jet Propulsion Laboratory, a Federally Funded Research and Development Center, or to other contractors or grant recipients only to the extent specified or referenced in applicable contracts, grants, or agreements.
- b. The procedural requirements in this document apply: (1) to all NASA organizations, elements, entities, or individuals; (2) to visitors on NASA property; (3) to all NASA equipment, property, systems, and facilities; (4) during all phases of the life cycle of systems or facilities; and (5) as specified in contract requirements.
- c. The provisions of this document apply to non-NASA, non-contractor personnel when on NASA property.
- d. The requirements in this NPR do not supersede more stringent requirements imposed by other Federal, State, or local government agencies.
- e. In this NPR, a requirement is identified by a "shall" statement and followed by the phrase "(Requirement xxxxx)." The number (xxxxx) is assigned to each requirement statement for the Safety and Mission Assurance Requirements

Tracking System.

Note: The word "shall" indicates that the rule is mandatory. Noncompliance with a "shall" statement requires approval of a request for relief per paragraph 1.13. Any text that does not contain a "shall" statement is for information and contextual purposes only.

f. In this NPR, the word "project" refers to a unit of work performed in programs, projects, and activities. Management of a work unit is referred to as "project management," which includes managing programs, projects, and activities.

g. In this NPR, a system is: (a) the combination of elements that function together to produce the capability to meet a need and (b) the end product (performs operational functions) and enabling products (provide life-cycle support services to the operational end products) that make up a system. The elements include all hardware, software, equipment, facilities, personnel, processes, and procedures needed for this purpose. h. The Center Director for NASA Headquarters is the Assistant Administrator for Infrastructure and Administration. In this NPR, requirements for Center Directors applicable to NASA Headquarters also pertain to the Assistant Administrator for Infrastructure and Administration.

P.3 Authority

- a. 42 U.S.C. S 2458c, National Aeronautics and Space Act of 1958, as amended.
- b. 42 U.S.C. S 2473(c)(1), Section 203 (c)(1) of the National Aeronautics and Space Act of 1958, as amended.
- c. 5 U.S.C., Government Organization And Employees, Paragraph 7902; Safety Programs.
- d. 5 U.S.C. S 7903, Protective Clothing and Equipment.
- e. 29 U.S.C., Labor, Paragraph 651 et seq.
- f. 40 U.S.C. S 3312, Compliance with Nationally Recognized Codes.
- g. 49 U.S.C., Transportation S 1421, the Occupational Safety and Health Act of 1970, as amended.
- h. 49 U.S.C S 5102, Transportation of Hazardous Materials; Definitions.
- i. 5 CFR Part 532, Prevailing Rate Systems.
- j. 5 CFR Part 550, Pay Administration (General).
- k. 14 CFR Chapter III, Commercial Space Transportation, Federal Aviation Administration, Department of Transportation.
- l. 14 CFR Part 1214, Subpart 1214.5, Space Flight: Mission Critical Space Systems Personnel Reliability Program.
- m. 14 CFR Part 1216, Subpart 1216.3, Procedures for Implementing the National Environmental Policy Act (NEPA).
- n. 21 CFR Part 1040, Performance Standards for Light Emitting Products.
- o. 21 CFR Part 1040.10, Laser Products.
- p. 21 CFR Part 1040.11, Specific Purpose Laser Products.
- q. 29 CFR Part 1904.32, Annual Summary.
- r. 29 CFR Part 1910, Occupational Safety and Health Standards.
- s. 29 CFR 1926, Safety And Health Regulations For Construction.
- t. 29 CFR Part 1960, Basic Program Elements for Federal Employees, Occupational Safety and Health Programs and Related Matters.
- u. 45 CFR Part 46, Protection of Human Subjects.
- v. 48 CFR Part 1807, NASA FAR Supplement; Acquisition Planning.
- w. 48 CFR Part 1823, NASA FAR Supplement; Environment, Energy and Water Efficiency, Renewable Energy Technologies, Occupational Safety, and Drug-Free Workplace.
- x. 48 CFR Part 1842, NASA FAR Supplement; Contract Administration and Audit Services.
- y. 48 CFR Part 1846, NASA FAR Supplement; Quality Assurance.
- z. 49 CFR Part 171.8, Hazardous Material Regulations; Definitions and abbreviations.
- aa. 49 CFR Part 172.101, Purpose and Use of Hazardous Materials Table.

- ab. 49 CFR Part 177, Carriage by Public Highway.
- ac. 49 CFR Part 571, Federal Motor Vehicle Safety Standards.
- ad. EO 12114, Environmental Effects Abroad Of Major Federal Actions.
- ac. EO 12196, Occupational Safety and Health Programs for Federal Employees, dated February 26, 1980, as amended.
- ad. EO 13043, Increasing Seat Belt Use in the United States, dated April 16, 1997, as amended.
- ae. Presidential Directive/National Security Council Memorandum Number 25 (PD/NSC-25), Scientific or Technological Experiments with Possible Large-Scale Adverse Environmental Effects and Aerospace Use of Major Radioactive Sources.

P.4 Applicable Documents

- a. NPD 1000.0, Strategic Management and Governance Handbook.
- b. NPD 1000.3, The NASA Organization.
- c. NPD 1001.0, 2006 NASA Strategic Plan.
- d. NPD 1800.2, NASA Occupational Health Program.
- e. NPD 2820.1, NASA Software Policy.
- f. NPD 6000.1, Transportation Management.
- g. NPD 7100.8, Protection of Human Research Subjects.
- h. NPD 7120.4, Program/Project Management.
- i. NPD 8500.1, NASA Environmental Management.
- j. NPD 8700.1, NASA Policy for Safety and Mission Success.
- k. NPD 8700.3, Safety and Mission Assurance (SMA) Policy for Spacecraft, Instruments, and Launch Services.
- l. NPD 8710.1, Emergency Preparedness Program.
- m. NPD 8710.5, NASA Safety Policy for Pressure Vessels and Pressurized Systems.
- n. NPR 8715.7, Expendable Launch Vehicle Payload Safety Program
- o. NPD 8720.1, NASA Reliability and Maintainability (R&M) Program Policy.
- p. NPD 8730.5, NASA Quality Assurance Program Policy.
- q. NPD 8820.2, Design and Construction of Facilities.
- e. NPR 1441.1, NASA Records Retention Schedules.
- s. NPR 1800.1, NASA Occupational Health Program Procedures.
- t. NPR 2810.1A, Security of Information Technology.
- u. NPR 3451.1, NASA Awards and Recognition Program.
- v. NPR 4100.1, NASA Materials Inventory Management Manual.
- w. NPR 4200.1, NASA Equipment Management Manual.
- x. NPR 5100.4, Federal Acquisition Regulation Supplement (NASA/FAR Supplement).
- y. NPR 5800.1, Grant and Cooperative Agreement Handbook.
- z. NPR 7120.5, NASA Program and Project Management Processes and Requirements.
- aa. NPR 7120.6, Lessons Learned Process.
- ab. NPR 7123.1, Systems Engineering Procedural Requirements.
- ac. NPR 7150.2, NASA Software Engineering Requirements.
- ad. NPR 7900.3, Aircraft Operations Management.

- ae. NPR 8000.4, Risk Management Procedural Requirements.
- af. NPR 8580.1, Implementing the National Environmental Policy Act and Executive Order 12114.
- ag. NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping.
- ah. NPR 8705.2, Human-Rating Requirements for Space Systems.
- ai. NPR 8705.4, Risk Classification for NASA Payloads.
- al. NPR 8705.5, Probabilistic Risk Assessment (PRA) Procedures for NASA Programs and Projects.
- ak. NPR 8705.6, Safety and Mission Assurance Audits, Reviews, and Assessments.
- al. NPR 8715.1, NASA Occupational Safety and Health Programs.
- am. NPR 8715.2, NASA Emergency Preparedness Plan Procedural Requirements.
- an. NPR 8715.5, Range Safety Program.
- ao. NPR 8715.6, NASA Procedural Requirements for Limiting Orbital Debris.
- ap. NPR 8820.2, Facility Project Implementation Guide.
- aq. NASA-STD-8709.2, NASA Safety and Mission Assurance Roles and Responsibilities for Expendable Launch Vehicle Services.
- ar. NASA-STD 8709.20, Management of Safety and Mission Assurance Technical Authority (SMA TA) Requirements.
- as. NASA-STD-8719.7, Facilities System Safety Guidebook.
- at. NASA-STD-8719.8, Expendable Launch Vehicle Payload Safety Review Process Standard.
- au. NASA-STD-8719.9, Standard for Lifting Devices and Equipment.
- av. NASA-STD 8719.11, Safety Standard for Fire Protection.
- aw. NASA-STD 8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics.
- ax. NASA-STD-8719.13, Software Safety Standard.
- ay. NASA-STD 8719.14, Process for Limiting Orbital Debris.
- az. NASA-STD-8739.8, Software Assurance Standard.
- ba. NSS/WS 1740.10, NASA Safety Standard for Underwater Facility and Non-Open Water Operations.
- bb. MIL-STD-882, Standard Practice for Safety Systems.
- bc. National Incident Management System, Department of Homeland Security, March 1, 2004.
- bd. SSP 50021, Safety Requirements Document.
- be. Safety and Mission Assurance Requirements Tree: <http://www.hq.nasa.gov/office/codeq/doctree/qdoc.htm>).
- bf. Lessons Learned Information System (LLIS): <http://nen.nasa.gov/portal/site/llis>.
- bg. NASA MSDS Inventory: <http://msds.ksc.nasa.gov>.
- bh. NASA-Handbook 8719.14, Handbook for Limiting Orbital Debris.
- bi. NASA Safety Reporting System (NSRS): <http://www.hq.nasa.gov/office/codeq/nsrs/index.htm>.
- bj. Wallops Flight Facility Range Safety Manual: see <http://www.wff.nasa.gov/~code803/pages/RSM20022.pdf>.
- bk. AFSPCMAN 91710, Licensing and Safety Requirements for Launch: see <http://thefederalregister.com/d.p/2005-03-01-05-3916>.
- bl. Air Force AFOSH Standard 48-12, Health Hazard Control for Laser Operations.
- bm. EM 385-1-1, U.S. Army Corps of Engineers, Safety and Health Requirements: see <http://www.usace.army.mil/usace-docs/eng-manuals/em385-1-1/toc.htm>.
- bn. Federal Standard 313, Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities, as revised: see http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=53769.

- bo. International Atomic Energy Agency (IAEA), Safety Series Number 6, Regulations for the Safe Transport of Radioactive Material, 1985 Edition as amended in 1990, Section III, paragraphs 301 through 306.
- bp. MIL-STD 454, Standard General Requirements for Electronic Equipment.
- bq. Range Commanders Council (RCC) Document 316-91, Laser Range Safety: see <http://www.fas.org/nuke/control/ccw/316-98/index.html>.
- br. NFPA 1, Uniform Fire Code.
- bs. NFPA 45, Standard on Fire Protection for Laboratories Using Chemicals.
- bt. NFPA 70, National Electrical Code.
- bu. NFPA 70E: Standard for Electrical Safety in the Workplace.
- bv. NFPA 101, Life Safety Code.
- bw. NFPA 921, Guide for Fire and Explosion Investigations.
- bx. NFPA 1561, Standard on Emergency Services Incident Management System.
- by. NFPA Life Safety Code Handbook.
- bz. ANSI 358.1, Emergency Eyewash and Shower Equipment, latest edition.
- ca. ANSI D6.1, Manual on Uniform Traffic Control Devices for Streets and Highways.
- cb. ANSI Z117.1, Safety Requirements for Confined Space.
- cc. ANSI Z136.1, American National Standard for Safe Use of Laser.
- cd. ANSI Z136.2, Safe Use of Optical Fiber Communication Systems Utilizing Laser Diode and LED Sources.
- ce. ANSI Z136.4, Recommended Practice for Laser Safety Measurements for Hazard Evaluation.
- cf. ANSI Z136.6, Safe Use of Lasers Outdoors.
- cg. ANSI/ASSE Z359.0-2007, Definitions and Nomenclature Used for Fall Protection and Fall Arrest
- ch. ANSI/ASSE Z359.1-2007, Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.
- ci. ANSI/ASSE 2359.2-2007, Minimum Requirements for a Comprehensive Managed Fall Protection Program.
- cj. ANSI/ASSE 2359.3-2007, Safety Requirements for Positioning and Travel Restraint Systems.
- ck. ANSI/ASSE 2359.4-2007, Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components.
- cl. Guide for Safety in the Chemical Laboratory, Manufacturing Chemists' Association, Inc.
- cm. NIOSH Publication No. 87-113, A Guide to Safety in Confined Spaces: see <http://www.cdc.gov/niosh/pdfs/87-113.pdf>.
- cn. Scientific or Technological Experiments with Possible Large-Scale Adverse Environmental Effects and Launch of Nuclear Systems into Space, dated December 14, 1977, as revised on May 8, 1996.
- co. S. Kaplan and B.J. Garrick, "On the Quantitative Definition of Risk," Risk Analysis, 1, 11-27, 1981.
- cp. National Research Council's report "Understanding Risk: Informing Decisions in a Democratic Society," National Academy Press, Washington, DC, 1996.
- cq. Eastern and Western Range (EWR) 127-1, Range Safety Requirements.
- cr. NASA SP 8013, NASA Micrometeoroid Environment Model [Near Earth to Lunar Surface].
- cs. NASA SP 8038, Micrometeoroid Environment Model [Interplanetary and Planetary].
- ct. SSP 30425, Space Station Program Natural Environment Definition for Design.
- cu. NASA TM 4527, Natural Orbital Environment Guidelines for Use in Aerospace Vehicle Development.
- cv. "Meteoroid Engineering Model (MEM): A Meteoroid Model for the Inner Solar System," H. McNamara, R. Suggs, B. Kauffman, J. Jones, W. Cooke, and S. Smith: 2004, Earth Moon and Planets, 95, 123-139.

P.5 Measurement/Verification

Compliance with the requirements contained in this NPR will be verified through processes contained in NPR 8705.6, Safety and Mission Assurance Audits, Reviews, and Assessments.

Cancellation

NPR 8715.3, dated January 24, 2000. Change 6 as of February 3, 2011 rescinds NM 8719-79 dated August 11, 2009.

/S/

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