NASA Procedural Requirements

NPR 8715.7B
Effective Date: April 27, 2020
Expiration Date: April 27, 2030

COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES

Printable Format (PDF)

Subject: Payload Safety Program

Responsible Office: Office of Safety and Mission Assurance

Appendix A. Definitions

Assessment. Review or audit process using predetermined methods that evaluates hardware, software, procedures, technical and programmatic documents, and the adequacy of their implementation.

Ground Operations Plan. A detailed description of the hazardous and safety critical operations associated with a payload and its associated ground support equipment. It contains the payload project's ground processing information providing the basis by which payload safety approval is obtained from the PSWG and Range Safety, along with the Safety Data Package. A flow chart of operations (hazardous and non-hazardous) is usually included. The Ground Operations Plan may be a stand-alone document or part of the payload project's Safety Data Package.

Ground Support Equipment. Ground-based equipment used to store, transport, handle, test, check out, service, and control aircraft, launch vehicles, spacecraft, or payloads.

Hazard. A state or a set of conditions, internal or external to a system, which has the potential to cause harm.

Hazard Analysis. Identification and evaluation of existing and potential hazards and the recommended mitigation for the hazard sources found.

Hazard Control. Means of reducing the risk of exposure to a hazard.

Hazardous Payload. A payload is considered a Hazardous Payload when a Payload Safety Engineer determines it includes systems, components, or payload ground operations hazards with the credible potential to cause loss of life, injury to personnel or public, or damage to equipment.

Noncompliance. An instance of failure to satisfy a requirement.

Payload. Any airborne or space equipment or material that is not an integral part of the carrier vehicle (i.e., not part of the carrier aircraft, balloon, sounding rocket, expendable or recoverable launch vehicle). Included are items such as free-flying automated spacecraft, Space Launch System payloads, Space Station payloads, launch vehicle payloads, flight hardware and instruments designed to conduct experiments, and payload support equipment.

Payload, Auxiliary. A small satellite (e.g., CubeSats, Nanosatellites, Picosatellites) ridesharing with a primary (or secondary) payload that does not interfere with the primary payload mission.

Payload, Primary. The principal or main payload of a launch vehicle.

Payload, Secondary. Secondary payloads can be launched along with the primary, providing a means to economically launch small spacecraft. These are generally independent missions that minimally impact the primary payload.

Payload Safety Engineer. NASA civil servant or NASA contractor (project or a third party) payload safety engineer familiar with spacecraft bus and instrument systems, related hazards, and how to control these hazards.

Payload Safety Introductory Briefing. The first meeting of a payload project's PSWG where the Payload Project

briefs the payload to the safety community. This meeting is also referred to as the Concept Briefing with respect to the United States Force (USSF) Space Command Manual (SSCMAN) 91-710, Range Safety User Requirements.

Range Safety. Application of safety policies, principles, and techniques to protect the public, NASA workforce, and/or property from hazards associated with range flight operations. Additionally, the term "Range Safety" is informally used to refer to the organization responsible for implementing/enforcing range safety requirements.

Relief from a Requirement. A documented authorization releasing a responsible party from meeting a requirement.

Safety Assessment. Process of qualitative risk categorization or quantitative risk (safety) estimation, followed by the evaluation of risk significance.

Safety Data Package. A data submittal that provides a detailed description of hazardous and safety critical flight hardware equipment, systems, components and materials that comprise the payload. Includes hazard reports, safety assessments, inhibits, and mitigations. Known as a Missile System Prelaunch Safety Package with respect to SSCMAN 91-710.

Safety Verification and Tracking Log. Used to track closure of each open hazard control verification identified in the hazard reports until all verifications have been completed.

Samples. Material brought back to earth from other planets, asteroids, comets, etc.

System Safety. Application of engineering and management principles, criteria, and techniques to identify and control hazards of engineered system to optimize safety and reduce risks within the constraints of operational effectiveness, time, and cost.

System Safety Plan. A written plan defining the approach to accomplish the project safety activities, including safety management, identification of safety tasks, roles and responsibilities, and the coordination and communication with project/systems engineers and approving authorities. It is also known as the Systems Safety Program Plan defined in SSCMAN 91-710, Volume III, Chapter 4.

Tailoring. The process used to adjust or seek relief from a prescribed requirement to accommodate the needs of a specific task or activity (e.g., program or project).

Waiver. 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.

| TOC | ChangeHistory | Preface | Chapter1 | Chapter2 | Chapter3 | AppendixA | AppendixB | AppendixC | ALL |

| NODIS Library | Program Management(8000s) | Search |

DISTRIBUTION:
NODIS

This document does not bind the public, except as authorized by law or as incorporated into a contract. 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: https://nodis3.gsfc.nasa.gov.