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Subject: NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping w/Change 7 (07/15/2013)

Responsible Office: Office of Safety and Mission Assurance

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Chapter 1. General Information

1.1 Objectives of NASA Mishap and Close Call Investigations

The objective of mishap and close call investigations is to improve safety by identifying what happened, where it happened, when it happened, why it happened, and what should be done to prevent recurrence and reduce the number and severity of mishaps.

1.2 Description of NASA Mishaps and Close Calls

1.2.1 NASA Mishap. An unplanned event that results in at least one of the following:

1.2.1.1 Injury to non-NASA personnel, caused by NASA operations.

1.2.1.2 Damage to public or private property (including foreign property), caused by NASA operations or NASA-funded development or research projects.

1.2.1.3 Occupational injury or occupational illness to NASA personnel.

1.2.1.4 NASA mission failure before the scheduled completion of the planned primary mission.

1.2.1.5 Destruction of, or damage to, NASA property.

1.2.2 The situations in 1.2.2.1-1.2.2.6 are not considered a NASA mishap or close call.

1.2.2.1 Illness or fatalities that are due to natural causes or are unrelated to the work environment when the disease, not the injury, is the proximate cause of the lost time, such as diabetes and its resultant complications (e.g., loss of vision).

1.2.2.2 Attempted or consummated suicide or intentionally self-inflicted injuries.

1.2.2.3 Injuries or fatalities resulting from altercations, attack, assault (unless incurred in the performance of official duties: for example, criminal investigators), or homicide.

Note: Incidents involving personnel injured as a result of violence in the work environment will be reported to the U.S. Department of Labor in accordance with 29 CFR 1904.5.

1.2.2.4 Destruction of, or damage to, any property (public, private, or Government) on a Center or involving NASA property on the ground outside the Center's gates, as a direct result of:

a. Weather conditions such as, but not limited to, hurricane, lightning, tornado, high winds, dust storm, tidal wave, tsunami, water spout, or ice/snow loads;

- b. Natural phenomenon such as, but not limited to, a flood, landslide, earthquake, meteoroid landing, or volcanic eruption;
- c. Wild fire; or
- d. Vandalism, riots, civil disorders, or felonious acts such as arson or stealing.

Note 1: In these cases, the weather, natural phenomenon, wild fire, vandalism, riot, civil disorder, or felonious act is the proximate cause for the mishap to be exempt from the mishap classification. For example, if the weather was an intermediate cause or a contributing factor to a mishap, this exemption to "mishap classification" would not apply. A bird strike to an airplane is not exempt. Note 2: Damage to NASA aircraft, vehicles, or any other property which occurs after an aircraft or vehicle has been stolen is not reportable as an accident. Damage to NASA aircraft, vehicles, or any other property that occurs when an individual misappropriates an aircraft or vehicle not authorized to be flown or driven by the individual will not be reported as an accident.

- e. Intentional, controlled jettison or release, during flight, of canopies, cargo, doors, drag chutes, hoist cable, hatches, life rafts, auxiliary fuel tanks, missiles, drones, rockets, and externally carried equipment not essential to flight, when there is no injury, illness, or reportable collateral damage and, in the case of missiles or drones, when the reason for jettison is not malfunction.
- f. Accidents occurring during the transportation of NASA material by commercial carriers, when NASA and/or NASA contractors had no roles or responsibilities for packing, securing, or transporting the items.

Note: If NASA or a NASA contractor was responsible for the safety of the transport or performed any activities related to securing and/or transporting the hardware, the incident would be evaluated to determine if it was a NASA mishap. In the past, NASA contractors have failed to adequately secure a load, which resulted in a transportation accident. This would still be considered a NASA mishap.

- g. Accidents involving civil aircraft owned by civil operators and accomplishing contract air missions for NASA, where there is no NASA property damage or civil servant injury.
- h. NASA equipment that resides off-site that is leased, on bailment, or loaned to contractors, commercial airlines, other Government agencies, or foreign governments when the lessee has assumed risk of damage or loss.

1.2.2.5 A malfunction or failure of component parts that are normally subject to fair wear and tear and have a fixed useful life that is less than the fixed useful life of the complete system or unit of equipment, provided that all of the following are true:

- a. There was adequate preventative maintenance.
- b. The malfunction or failure of the component was the only damage, and the sole action is to replace or repair that component. (This exception does not apply to a malfunction or failure of a component part that results in a fatality, injury, or damage to another component or the facility.)

1.2.2.6 Test-induced damage is not considered a mishap provided that all of the following are true:

Note 1: NASA conducts tests to better understand and mitigate complex design, manufacturing, or operational issues. The objective of testing is to provide NASA with confidence that the system meets its technical and programmatic requirements and can successfully and safely perform its mission in the operational environment. Some tests, by their nature, are designed and intended to result in hardware damage: for example, a structural test-to-failure. Other tests are aggressive in nature, and test-incurred damage often occurs and the knowledge gained is used to improve designs. These instances of test damage would be a reportable NASA mishap if the failure/damage manifested was associated with procedural errors or with a noncompliance to design or construction requirements OR if it caused harm to personnel or to uninvolved equipment, facilities, or property. Note 2: For the purposes of mishap determination, development tests are not "missions" nor are development test objectives "mission objectives" unless specifically defined as such in the program, project, or mission premishap plan.

- a. The test-induced damage did not result in:
 - (1) Injury, illness, or fatality.
 - (2) Damage to public property, other Government agency property, or private property (e.g., a personnel-owned vehicle), regardless of location of that property.

Note: Where public, government, or private property is located within a military test range, and the risk

to such property is formally approved/accepted by the range authority as part of the test approval process, NASA may support and accept the mishap classification, reporting, and investigation completed by the outside authority (the Federal agency authorized to investigate the military range) as described in paragraph 1.10 of this document.

(3) Hazardous hardware debris leaving the test cell, test chamber, protected facility, and/or test range.

b. The facility and test equipment functioned properly (except when functions of the facility and/or test equipment themselves are being tested and part of approved test objectives).

c. The damage is limited to test article(s) or test facility(ies), and the risk of damage was formally documented and accepted via signature before the test. The type or general category (i.e., water damage, structural failure, thermal overload) of test-induced damage was documented as a designed/intended or potential outcome of the test, and the risk (including related uncertainties) of the test-induced damage was formally accepted by appropriate authority(ies). Depending on the test, the appropriate authority may be the owner(s) of the damaged property and/or the person(s) responsible for funding replacement of damaged equipment (e.g., owner of the test article, test support equipment, test cell, chamber, pad, protected facility, and/or range, project, or program manager).

Note 1: The signed document describing the risk of potential test-induced damage outcomes includes the test team's best understanding of the uncertainties in environments, test limits, and/or system performance. Note 2: Examples of test-induced damage incidents that may be accepted "prior to testing" in a test plan or related document include: 1. Structural damage due to planned structural tests-to-yield when performance between yield and ultimate failure is uncertain. 2. Unplanned but acceptable limited erosion of a flame trench during launch or engine firing. 3. Thermal damage to brakes and tires during a maximum braking test. 4. Thermal, blast, or erosion damage to cables and other normally exposed equipment on a launch pad or in an explosive chamber. 5. Excessive splashdown structural damage to a recoverable booster when new parachute performance is uncertain. 6. Loss of test hardware due to known, accepted deficiencies in the test and/or test support system (i.e., planned use of off-the-shelf low-reliability sounding rockets for low-cost suborbital tests). 7. Crash damage to a model airplane due to known and accepted controller handling quality limitations. 8. Damage resulting from one or more of the following: (a) Acknowledged limitations in pretest analysis/models and/or uncertainties in analysis/model/environmental predictions. (b) Planned test operations in known and approved hazardous environmental conditions. Purposefully testing in an organizational environment where NASA, by formal choice, does not control hazards (i.e., Space Act or international agreements where NASA cedes design and/or operational risk management to the partner). Note 3: Examples of test-related damage that would normally not be "accepted risks" and, therefore, would be candidates for mishap categorization include: 1. Damage due to human error in test setup or conduct when relevant human performance is not part of the test objectives. 2. Damage due to deficient or otherwise less than standard test planning or test design. 3. Damage to the test article due to test facility malfunction during a test. 4. Damage due to test facility software malfunction when relevant software performance is not part of the test objectives.

1.2.3 Close Call. An event in which there is no injury or only minor injury requiring first aid and/or no equipment/property damage or minor equipment/property damage (less than \$1000), but which possesses a potential to cause a mishap.

1.3 Determining the Classification Level and Type of Investigation to be Conducted

1.3.1 The severity of the personnel injury and the direct cost of the mishap or close call (property damage and/or mission failure) shall determine the classification level of the mishap or close call (see Figure 1) and the corresponding type of investigation to be conducted ([Requirement 44074](#)).

1.3.2 When the Administrator, Associate Administrator (AA), Mission Directorate Associate Administrator (MDAA), Chief Office of Safety and Mission Assurance (Chief/OSMA), the Designated Agency Safety and Health Official (DASHO), Center Director (CD), or the Executive Director, Office of Headquarters Operations (ED/OHO), believes that the mishap or close call is a high-visibility event, he/she may elevate the mishap classification level of investigation to the classification he/she deems appropriate and request the appropriate appointing official to form a Mishap Investigation Board (MIB).

1.3.3 Determining the direct cost of the mishap or close call (for the purpose of mishap classification).

1.3.3.1 The responsible manager, with review and concurrence by the Center safety office, shall calculate the direct cost of a mishap or close call by adding all the actual costs (or the estimate of the cost) (the greater value of actual or fair market value) of damaged property, destroyed property, or mission failure; i.e., actual cost of repair or replacement, labor (actual value of replacement or repair hours for internal and external/contracted labor), cost of the lost commodity (e.g., the cost of the fluid that was lost from a ruptured pressure vessel), as well as resultant

costs such as environmental decontamination, property cleanup, and restoration ([Requirement 44077](#)).

Note 1: The initial estimate of the direct cost is calculated in the first 24 hours (paragraph 1.5.5), because the appointing official uses this estimate to determine the classification of the incident and the resources to allocate to the investigation. The final direct cost is calculated as the damage assessments are completed and is incorporated into the mishap investigation report (paragraph 6.1.6). The final mishap classification level could change based on the final estimate of the direct cost. Note 2: Replacement cost to purchase commercially available part or manufacture custom part as needed to be an equivalent replacement.

1.3.3.2 Even in cases where replacement parts are available from salvaged or excess equipment at little or no cost to NASA, the direct cost of the mishap or close call shall include the actual costs of replacement parts as if these were purchased new, plus labor calculated as if the salvage/excess parts were unavailable ([Requirement 44078](#)).

1.3.3.3 In cases where insurance compensation, contractor compensation, or other compensation is available or provided, the direct cost of the mishap or close call shall include the direct cost (or estimate of the cost) as if this compensation were not available or provided ([Requirement 44079](#)).

1.3.3.4 The cost of the safety mishap investigation shall not be included in the direct cost ([Requirement 44080](#)).

1.3.3.5 The responsible program manager (or designee), in coordination with the Chief Financial Officer (or designee), shall calculate the cost of a mission failure by determining the cost of the "unique" mission from Mission Approval (Key Decision Point C) through project closeout, including consumables (e.g., fuel), launch costs, and dedicated institutional support costs such as Deep Space Network, NASA Engineering and Safety Center, Independent Technical Authority, or others.

Note 1: Example of Mission Failure

The Space Shuttle loses a main engine on ascent and must perform a Return to Launch Site (RTL) launch abort. The preapproved minimum mission success criteria are obviously unmet. The cost of this mission failure would be the cost of the Space Shuttle processing and operations (labor and consumables) dedicated to this mission and any payload processing and integration that would have to be redone for reflight. If, after the abort, the Agency decides not to reflly, then the cost of the mission failure would include the entire payload cost accrued since its approval (Key Decision Point C or equivalent). Note 2: Examples of Incidents That Would Not Be Considered a Mission Failure: The Mars Exploration Rover Spirit fails next week (long after it has met its minimum success criteria (minimum mission objectives)). This would not be classified as a mission failure, so no cost would be assigned. The program manager may choose to investigate this failure, but there would be no cost assigned.

Classification Level & Investigation Type	Property Damage	Injury
Type A Mishap	Total direct cost of mission failure and property damage equal to or greater than \$2,000,000 or more, or Crewed aircraft hull loss has occurred, or Unexpected crewed aircraft departure from controlled flight occurred (except high performance jet/test aircraft such as F-15, F-16, F/A-18, T-38, OV-10, and T-34, when engaged in flight test activities).	Occupational injury or illness that resulted in: A fatality, or A permanent total disability.
Type B Mishap	Total direct cost of mission failure and property damage equal to or greater than \$500,000 but less than \$2,000,000.	Occupational injury or illness that resulted in a permanent partial disability, or Hospitalization for inpatient care of three or more people within 30 workdays of the mishap.
Type C Mishap	Total direct cost of mission failure and property damage equal to or greater than \$50,000 but less than \$500,000.	Nonfatal occupational injury or illness that resulted in: Days away from work, not including the day or shift on which it occurred, or Restricted work, or transfer to another job not including the day or shift on which it occurred, or Hospitalization for inpatient care of one or two people within 30 workdays of the mishap..
Type D Mishap	Total direct cost of mission failure and property damage equal to or greater than \$20,000 but less than \$50,000.	Any nonfatal OSHA recordable occupational injury or illness that does not meet the definition of a Type C mishap.
Close Call	An event in which there is no equipment or property damage, or minor equipment property damage of less than \$20,000, but which possesses a potential to cause a mishap.	No injury or only minor injury requiring first aid, but which possesses a potential to cause a mishap.

Figure 1. Mishap Classification Levels and Type of Investigation to be Conducted

1.4 Roles and Responsibilities

1.4.1 Administrator. The Administrator:

- a. May elect to be the appointing official for Type A mishaps or delegate to the AA. (If the Administrator elects not to be the appointing official, the MDAA, CD, or another designee will serve as the appointing official.) ([Requirement 44083](#)).
- b. Shall serve as appointing official for NASA joint participation on a MIB with the Department of Defense (DoD) and other agencies unless authority is delegated by existing agreements ([Requirement 44084](#)).
- c. May elect to be an endorsing official for Type A mishaps and other mishaps in which he/she is the appointing official.

1.4.2 Chief/OSMA. The Chief/OSMA or designee shall:

- a. Ensure the proper reporting, investigating, and recordkeeping for mishaps and close calls by defining the mishap reporting and investigating process, updating this NPR, verifying its implementation, developing mishap investigation training, and identifying candidate mishap investigation tools ([Requirement 44087](#)).
- b. Concur with the mishap classification level, investigation approach, and the MIB membership and serve as an endorsing official for the mishap report for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls ([Requirement 44088](#)).
- c. Provide a qualified NASA person to support NTSB investigations of NASA aircraft mishaps ([Requirement 44089](#)).
- d. Archive NASA Headquarters-approved NASA mishap investigation board reports and related documents per NPR 1441.1 ([Requirement 44090](#)).

1.4.3 Inspector General. The Inspector General shall investigate criminal activity associated with mishaps and close calls ([Requirement 44091](#)).

1.4.4 AA. The AA shall:

- a. Serve as the appointing official for Type A mishaps if designated by the Administrator ([Requirement 44093](#)).
- b. Obtain concurrence from the Chief/OSMA and the Chief Engineer on the MIB membership of mishaps in which he/she is the appointing official ([Requirement 44094](#)).
- c. Serve as an endorsing official for all mishaps in which he/she is the appointing official ([Requirement 44095](#)).

1.4.5 MDAA. The MDAA shall:

- a. Implement the mishap and close call reporting, investigating, and recordkeeping requirements for their assigned Mission Directorates for mishaps and close calls that occur outside the Center's gates, during in-space flight, or at a program/project contractor site that is not managed by a Center ([Requirement 44097](#)).
- b. Approve via signature all his/her program and project (as defined in NPR 7120.5) Program/Project Mishap Preparedness and Contingency Plans. (These plans will be developed by the cognizant Center safety offices, and will include procedures to notify, report, investigate, and record mishaps and close calls that involve Mission Directorate programs/projects/activities whether onsite or offsite, and whether on the ground or in flight.) ([Requirement 44098](#)).

Note: All mishaps that occur at a Center are investigated per the Center's Mishap Preparedness and Contingency Plan. The program's plan supports the Center plan by providing additional information such as, but not limited to, hazardous materials, partner agreements, and program contact lists. It also serves as a stand-alone plan for mishaps and close calls that occur outside the Center's gates, during in-space flight, or at a program/project contractor site.

- c. Determine the mishap classification level (or assign a designee to determine the classification level) for all mishaps for which he/she has reporting responsibility and obtain concurrence on this classification level from the Chief/OSMA for Type A and B mishaps, high-visibility mishaps, and high-visibility close calls (([Requirement 44100](#))).

Note: Aircraft Operations are managed by a program-independent flight operations office; therefore, the Center Director serves as the appointing official for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls involving aircraft managed by his/her Center.

- d. Serve as the appointing official for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls that involve Mission Directorate managed programs/projects/activities that occur during space flight or occur outside the Center's gates at MDAA program/project sites (excludes off-site Center support contractor locations) ([Requirement 44102](#)).

Aircraft Operations are managed by a program-independent flight operations office; therefore, the Center Director serves as the appointing official for mishaps and close calls involving aircraft managed by his/her Center.

- e. Serve as the appointing official (or designate the responsibility in the Program/Project Mishap Preparedness and Contingency Plan) for Type C mishaps, Type D mishaps, and close calls that involve Mission Directorate managed programs/project/activities that occur during space flight or occur outside the Center's gates, during at MDAA program/project sites (excludes off-site Center support contractor locations) ([Requirement 44104](#)).

- f. Provide funding and support for investigations within their programs and involving their hardware, facilities, or enabling activities ([Requirement 44105](#)).

- g. Ensure that agreements for joint programs with international partners and other Federal agencies incorporate elements of this NPR to ensure that joint mishap investigating and reporting complies with NASA requirements ([Requirement 44106](#)).

1.4.6 Assistant Administrator, Office of Public Affairs (AA/OPA).

- a. The AA/OPA shall establish guidelines for the public release of mishap reports and related information ([Requirement 44108](#)).
- b. With the assistance of the Center safety office, Interim Response Team (IRT), investigating authority, and CD or ED/OHO, the AA/OPA shall release information to the press and media (i.e., potential hazards that may affect the public, interim reports, and the authorized mishap report) ([Requirement 44109](#)).
- c. For Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls, the AA/OPA (or designee) shall appoint a Headquarters public affairs advisor ([Requirement 31098](#)). (For Type B mishaps the AA/OPA may delegate authority to appoint a public affairs advisor to the Center Public Affairs Office [PAO].) ([Requirement 44110](#)).

1.4.7 CD and ED/OHO. The CD and the ED/OHO shall:

- a. Develop Center and Program Mishap Preparedness and Contingency Plans to support this NPR (this includes procedures to notify, report, investigate, and record mishaps and close calls that involve programs, projects, and activities that fall under their responsibility) ([Requirement 44144](#)).
- b. Implement the mishap reporting, investigating, and recordkeeping requirements for all projects, programs, and activities that fall under their SMA responsibility ([Requirement 44115](#)).
- c. Provide funding and support for investigations at their Centers, within their projects and programs, and involving their hardware, facilities, or enabling activities ([Requirement 44116](#)).
- d. Determine the mishap classification level (or assign a designee to determine the classification level) for all mishaps for which the Center has reporting responsibility and obtain concurrence on this classification level from the Chief/OSMA for Type A and B mishaps, high-visibility mishaps, and high-visibility close calls ([Requirement 44117](#)).
- e. Serve as the appointing official for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls that occur at his/her Center, at off-site Center support contractor locations, or at off-site contractor locations that are managed by the Center and are not part of any MDAA program/project activity ([Requirement 44118](#)).

Note: Aircraft Operations are managed by a program-independent flight operations office; therefore, the Center Director serves as the appointing official for mishaps and close calls involving aircraft managed by his/her Center.

- f. Serve as the appointing official (or designate the responsibility in the Center Mishap Preparedness and Contingency Plan) for Type C mishaps, Type D mishaps, and close calls that occur at his/her Center, at off-site Center support contractor locations, or at off-site contractor locations that are managed by the Center and are not part of any MDAA program/project activity ([Requirement 44120](#)).
- g. In the event that there is a mishap involving injury of a human research subject at a NASA Center, request the Chief Health and Medical Officer (CHMO) concurrence on the investigating authority's membership ([Requirement 44121](#)).
- h. Personally report, by telephone or e-mail, to the Administrator within 24 hours of learning the instance of any NASA Type A mishap, or NASA Type B mishap, and personally report (or Deputy to report), by telephone or e-mail, to the Associate Administrator within 24 hours of learning the instance of any NASA Type C mishap that involves a lost-time injury or illness ([Requirement 44122](#)).
- i. Personally report, by telephone or e-mail, to the Administrator within 24 hours of any nonoccupational fatality, such as sudden cardiac arrest of a NASA civil service employee or a resident contractor that occurred on site (a resident contractor is a NASA contractor whose primary place of business is on or near a NASA Center or NASA-owned facility) ([Requirement 44123](#)).
- j. Personally report, by telephone or e-mail, to the Administrator when it becomes known that there is any off-the-job fatality or serious injury/illness of a NASA civil service employee or resident contractor ([Requirement 44124](#)).
- k. Ensure that local procedures for dealing with the needs of the NASA workforce (civil service employees and contractor employees) when they are experiencing a crisis situation (e.g., serious injury, illness, or fatality of workforce member or family member) are:
 - (1) Reviewed annually ([Requirement 44126](#)).
 - (2) Include a process for immediately notifying the next of kin for mishaps and on site nonoccupational medical events resulting in fatality or serious injury ([Requirement 44127](#)).
 - (3) Provide information to the person or family (when the person is unable to receive such information due to the injury or illness) concerning benefits, such as extended sick-leave and disability ([Requirement 44128](#)).
- l. Ensure that the NASA civil service employees designated to communicate with the family of an injured, ill, or deceased individual have received training in NASA policy concerning benefits and crisis intervention ([Requirement 44129](#)).
- m. Initiate the use of the NASA Family Assistance Fund (NFAF), upon the NASA civil service employee family's agreement or request ([Requirement 44130](#)).

Note: The NFAF, in cooperation with the Federal Employees Education and Assistance Fund (FEEA), is available to help meet the unforeseen medical, financial, and educational needs of NASA civil service employees. NFAF and FEEA do not provide assistance to contractors. Upon request from a NASA civil service employee, NASA Human Resources, Personnel Division, will contact the Chair of the NFAF and FEEA's Washington Representative, to request assistance. FEEA can assist with immediate financial needs, such as funeral expenses, medical expenses, and short-term financial hardships.

- n. Obtain concurrence from the Chief/OSMA and the Chief Engineer on the MIB membership of Type A, Type B, high-visibility mishaps, and high-visibility close calls in which he/she is the appointing official ([Requirement 44132](#)).
- o. Provide administrative and logistical support for the investigating authority working on the Center and distribute the authorized mishap report per this NPR ([Requirement 44133](#)).
- p. Verify that NASA contractors and grantees conduct mishap investigations and provide mishap reports as specified in their contracts and in NFS 1852.223-70 ([Requirement 44134](#)).
- q. Serve as an endorsing official for mishaps and close calls in which he/she is the appointing official ([Requirement 44135](#)).

1.4.7.1 The ED/OHO shall provide funding and support for investigations of mishaps that occur at NASA Headquarters ([Requirement 67138](#)).

1.4.8 Program and Project Managers. Program and project managers shall:

- a. Concur on the Program/Project Mishap Preparedness and Contingency Plan ([Requirement 44137](#)).
- b. In the event of a mishap or close call at the Center, activate the Program Mishap Preparedness and Contingency Plan ([Requirement 44138](#)).
- c. Provide funding and support for investigations within their program jurisdiction or involving their hardware and facilities ([Requirement 44139](#)).
- d. Assist the investigating authority as requested ([Requirement 44140](#)).
- e. When tasked by the appointing official, develop the Corrective Action Plan (CAP), implement the CAP, support the Center safety office personnel as they verify that the CAP has been completed, and generate the lessons learned ([Requirement 44141](#)).

1.4.9 Responsible Organization. The responsible organization shall:

- a. Assist the investigating authority as requested ([Requirement 44143](#)).
- b. When tasked by the appointing official, develop the CAP, implement the CAP, support the Center safety office personnel as they verify that the CAP has been completed, and generate the lessons learned ([Requirement 44144](#)).

1.4.10 Appointing Official. The appointing official shall:

- a. Use this NPR to determine the type of investigating authority (i.e., Mishap Investigation Board [MIB], Mishap Investigation Team [MIT], or Mishap Investigator [MI]) that will investigate a mishap or close call or, alternately, whether NASA will accept the investigation and subsequent mishap report of another competent authority that may have jurisdiction ([Requirement 44146](#)).
- b. Determine the level of NASA involvement, if any, when a mishap resulted from the actions of an outside source that was not involved in NASA operations ([Requirement 44147](#)).
- c. Initiate a NASA investigation pursuant to this NPR, when the appointing official believes that a NASA contractor's/grantee's mishap report is not adequate because it failed to reach root cause(s), failed to provide recommendations that prevent recurrence, is not suitably independent, or is in some other way deficient ([Requirement 44148](#)).
- d. Generate a formal memorandum for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls that communicates the appointment of the investigating authority members, the chairperson, the ex officio, and the advisors. (For Type C mishaps, Type D mishaps, and close calls, the appointment orders can be less formal and communicated via a Center process.) ([Requirement 44149](#)).
- e. Serve as an endorsing official for mishaps and close calls in which he/she is the appointing official ([Requirement 44151](#)).
- f. Assign the responsible organization(s)/program(s)/project(s) to develop the CAP, implement the CAP, and generate the lessons learned ([Requirement 44152](#)).
- g. Ensure that the mishap investigation process for the assigned mishap or close call is properly completed ([Requirement 44153](#)).
- h. Verify that the mishap report is reviewed, endorsed, and authorized for public release ([Requirement 44154](#)).
- i. Ensure that the CAP is developed and implemented ([Requirement 44155](#)).
- j. Ensure that the lessons learned are developed, reviewed, and authorized for public release ([Requirement 44156](#)).

- k. Release the investigating authority from duty ([Requirement 44157](#)).
- l. Generate the CAP closure statement and the mishap activities completion statement ([Requirement 44158](#)).
- m. Assist the investigating authority as requested ([Requirement 44159](#)).
- n. If the NTSB performs an investigation, the appointing official shall:
 - (1) Initiate a NASA mishap investigation per this NPR ([Requirement 44161](#)).
 - (2) Request that a NASA representative be a party to the NTSB's investigation ([Requirement 44162](#)).

Note: It is imperative that the appointing official communicate the time commitment and expectations with the supervisor of individuals selected to serve on mishap investigations and obtain the supervisor's agreement prior to appointing individuals to an investigating authority.

1.4.11 Endorsing Official.

- a. The endorsing official shall review the mishap investigation report and provide a signed written endorsement, comments, and a recommendation as to whether the mishap report should be approved or rejected ([Requirement 44164](#)).
- b. This endorsement and any comments shall be attached to the mishap report and become part of the permanent record ([Requirement 44165](#)).

1.4.12 Ex Officio. The ex officio shall:

- a. Serve as the authorized representative of the Chief/OSMA ([Requirement 44167](#)).
- b. Be a nonvoting participant in all investigation deliberations ([Requirement 44168](#)).
- c. Participate in all investigation proceedings as he/she deems appropriate ([Requirement 44169](#)).
- d. Assure that the investigation is conducted in conformance with NASA policy and this NPR and the investigation process is fair, independent, and nonpunitive ([Requirement 44170](#)).

Note: When available, an OSMA's Mishap Investigation Support Office mishap investigation specialist is the preferred choice as ex officio for Type A and Type B mishaps and high-visibility mishaps and close calls investigations.

- e. Assure that the mishap report contains the proper elements including proximate cause(s), root cause(s), failed barrier(s), and observation(s); sufficient facts/data to support the finding(s) and recommendation(s); and a mishap investigation summary ([Requirement 44171](#)).
- f. Sign the final mishap report demonstrating his/her belief that paragraphs 1.4.12.d-1.4.12.e, and paragraphs 1.7.1.a-1.7.1.l of this NPR have been satisfied or attach a signed written description of the report's deficiencies ([Requirement 44172](#)).
- g. For Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls, provide the Chief/OSMA interim briefings on the status of the investigation, upon his/her request ([Requirement 44173](#)).

1.4.13 Chairperson. The chairperson of the investigating authority shall:

- a. Manage and coordinate all aspects of the mishap investigation, including, but not limited to, the following tasks: assign group leaders; interview witnesses; reconstruct the mishap or close call; identify facts; identify proximate cause(s) and root cause(s); generate recommendation(s); and complete the mishap report ([Requirement 44175](#)).
- b. Have the authority to impound data, records, equipment, and facilities and collect/salvage data and debris ([Requirement 44176](#)).
- c. For mishaps at contractor or subcontractor sites, work through the contracting officer with guidance from the legal advisor to obtain and impound data ([Requirement 44177](#)).

Note: For mishaps outside the Center's gates, NASA has the authority to impound NASA property, however, the ability to impound or collect other data, records, and equipment is determined by the local and Federal laws, Agency agreements, and contracts.

- d. Release impounded data, records, equipment, facilities, and the mishap site when they are no longer needed by the investigating authority ([Requirement 44179](#)).

Note: If repairs or modifications need to be made prior to returning equipment or facilities to use, the release of impounded items should include a letter stating what action(s) is (are) needed.

- e. Define the roles and/or areas of investigative responsibility for each group or subgroup on the MIB or MIT, as needed ([Requirement 44181](#)).
- f. Coordinate with the investigating authority's legal advisor, Headquarters or Center public affairs advisor, and import/export control advisor throughout the investigation ([Requirement 44182](#)).
- g. Report only to the appointing official (or designee) during the investigation ([Requirement 44183](#)).

Note: The intent of this requirement is to provide the Chair of the Investigating Authority with only one supervisor during the investigation, thereby preventing numerous NASA requests for data and status. The report to the appointing official may include information such as a status, facts, preliminary findings (if the Chair desires), and recommendations which need immediate implementation.

- h. Refer allegations and evidence of criminal activity that are identified in the course of an investigation to the Office of Inspector General ([Requirement 44185](#)). Privileged witness statements will be protected to the extent provided by law.

1.4.14 Investigating Authority. The investigating authority shall conduct a comprehensive investigation within the defined scope of the appointment letter or appointment orders, generate the products indicated in paragraph 1.7 and Figure 5 of this NPR, prepare a mishap report, and sign the report ([Requirement 44187](#)).

1.4.15 Investigating Authority's Advisors. The advisors shall:

- a. Attend meetings as needed, travel with the investigating authority as requested, and have access to all investigative material with the exception of witness statements and testimony ([Requirement 44189](#)).

Note: The legal advisor may review witness statements and testimony in order to provide adequate legal guidance.

- b. Provide advice to the investigating authority ([Requirement 44191](#)).
- c. Sign the mishap report stating that he/she has reviewed the mishap report and that it meets NASA policies and procedures in his/her functional area. ([Requirement 44192](#)).

1.4.16 Legal Advisor. The legal advisor shall:

- a. Develop nondisclosure agreements if the investigating authority uses a contractor as administrative support ([Requirement 44194](#)).
- b. Develop nondisclosure agreements if the investigating authority uses a contractor to analyze interview data or participate in interviews ([Requirement 44195](#)).
- c. Provide legal advice and counsel as requested by the board chair ([Requirement 44196](#)).
- d. Attend interviews, if the interviewee is accompanied by a lawyer during the interview process ([Requirement 44197](#)).

1.4.17 The advisors may be included or excluded from listening to any deliberations at the discretion of the chairperson.

1.4.17.1 The chairperson may exclude advisors (with the exception of the legal advisor) from participating in deliberations that discuss privileged witness testimony ([Requirement 44199](#)).

Note: The legal advisor may review witness statements and testimony in order to provide adequate legal guidance.

1.4.18 Investigating Authority's Consultants. Per their contract, consultants shall:

- a. Provide advice to the investigating authority ([Requirement 44202](#)).
- b. Perform analysis ([Requirement 44203](#)).
- c. Assist in formulating conclusions, as requested ([Requirement 44204](#)).

1.4.19 The consultants shall not:

- a. Participate in deliberations (vote on findings) ([Requirement 44206](#)).
- b. Sign the mishap report ([Requirement 44207](#)).
- c. Read, listen to, or participate in witness interviews unless they are tasked to analyze interviews, and they have signed a nondisclosure agreement prepared by NASA Office of the General Counsel or Center Chief Counsel

([Requirement 44208](#)).

Note: Contractors specializing in witness interview techniques or technical expertise may be hired by the MIB, if the following are true: the contractor hired to support the MIB: a. is not affiliated with the mishap, the contractors, or responsible organizations involved in the mishap; b. is specifically tasked by contract to support the interview process or analyze interviews; c. has signed the nondisclosure agreement prior to their participation or support; and d. NASA does not have a sufficient number of Federal employees or expertise on the board to perform the task.

1.4.20 If the Chair of the Investigating Authority chooses to use a person that is not a Federal employee as administrative support, that person shall sign a nondisclosure agreement prior to having access to any mishap data or International Traffic Arms Regulations (ITAR), Export Administration Regulations (EAR), proprietary, or privileged information ([Requirement 44214](#)).

Note: An administrative support person may support the mishap board. This support may include access to privileged interview statements as long as the person is a Federal employee or the person has signed the appropriate nondisclosure agreement prior to having access to any mishap data or information.

1.4.21 Interim Response Team (IRT). The IRT shall:

- a. Notify the Center PAO about casualties, damages, and any potential hazards to the public, and notify legal advisors (as appropriate) ([Requirement 44217](#)).
- b. Assist the incident commander, as requested ([Requirement 44218](#)).
- c. Preserve evidence, document the scene, identify witnesses, and collect debris ([Requirement 44219](#)).
- d. Only Federal employees on the IRT shall support the Center safety office in impounding data and collecting witness statements (written statements when possible) ([Requirement 44220](#)).
- e. For mishaps at contractor or subcontractor sites, the IRT shall work through the contracting officer, with the guidance from the legal advisor, to obtain and impound data ([Requirement 44221](#)).

Note: For mishaps outside the Center's gates, NASA has the authority to impound NASA property, however, the ability to impound or collect other data, records, and equipment is determined by the local and Federal laws, Agency agreements, and contracts.

f. Advise the supervisor if drug testing should be requested per the NPR 3792.1, Plan for a Drug-Free Workplace ([Requirement 44223](#)).

Note: Per NPR 3792.1 the supervisor shall initiate drug testing after a mishap if the mishap results in a fatality or personal injury requiring immediate hospitalization or in damage estimated to be in excess of \$10,000 to government or private property. This applies to Federal employees only. Drug testing of contractors is dependent upon their contract.

- g. Provide all available mishap data and evidence to the investigating authority ([Requirement 44225](#)).
- h. Support the AA/OPA (or designee), Center safety office, IRT, and CD or ED/OHO in the release of information to the press and media to alert Center personnel and the public of any known hazards and their potential effects, and provide instructions that will mitigate the risk and harm ([Requirement 44226](#)).

1.4.22 Incident Commander. The incident commander shall implement the procedures outlined in the Center Mishap Preparedness and Contingency Plan to coordinate rescue activities, mitigate hazards, and safe and secure the mishap site ([Requirement 44227](#)).

1.4.23 Center Safety Office. The Center safety office shall:

- a. Support the development of the Center Mishap Preparedness and Contingency Plan, Program Mishap Preparedness and Contingency Plan(s), contract clauses, mishap investigation training, and a mishap investigation tool repository (that makes tools readily accessible to investigating authorities) ([Requirement 44229](#)).
- b. Develop the Program/Project Mishap Preparedness and Contingency Plans for Programs/Projects as defined by NPR 7120.5 and that their Center manages ([Requirement 44230](#)). Programs with aircraft in the developmental, qualification, or certification phases of the program shall have a Program Mishap Preparedness and Contingency Plan that is tailored for the particular phase of the program. ([Requirement 68379](#)).
- c. Ensure that their Center's employees are familiar with the roles and responsibilities as documented within the Center Mishap Preparedness and Contingency Plan and this NPR ([Requirement 44231](#)).

- d. Implement the Center Mishap Preparedness and Contingency Plan; when applicable, support the program as they initiate the Program Mishap Preparedness and Contingency Plan; and initiate, facilitate, and coordinate all investigation activities per the plan ([Requirement 44232](#)).
- e. Report the mishap to Headquarters per the reporting requirements defined in this NPR and to OSHA (when applicable) ([Requirement 44233](#)).
- f. Support the incident commander as he/she safes and secures the mishap site ([Requirement 44234](#)).
- g. Impound data, records, equipment, and facilities ([Requirement 44235](#)).
- h. Advise the supervisor that drug testing should be initiated ([Requirement 44236](#)).
- i. Collect witness statements (written statements preferred) ([Requirement 44237](#)).
- j. Ensure that mishap and close call information is entered in the Incident Reporting Information System (IRIS) per the requirements outline in this NPR ([Requirement 44238](#)).

Note: Close calls involving aircraft may be entered into the NASA Aviation Anomaly Reporting System (NAARS) in lieu of IRIS.

- k. Verify the CAP is complete and all elements of the investigation have been completed ([Requirement 44240](#)).
- l. Retain mishap investigation records per NPR 1441.1 and physical evidence (debris) as necessary ([Requirement 44241](#)).
- m. Keep an updated list of all Center personnel that have training and experience in mishap investigation including information such as relevant training courses, date of training, recent participation in a mishap investigation, and security clearances ([Requirement 44242](#)).

1.4.24 The Office of Protective Services (OPS) shall:

- a. Upon request from the appointing official, perform a classification review of the endorsed mishap report to determine if any section of the report (or the whole report) needs to be classified or if it may be authorized for public release ([Requirement 44245](#)).

1.4.25 The Center security office shall:

- a. Support the Incident Commander, Center safety office, and IRT in securing the mishap site and impounding data, records, equipment, and facilities ([Requirement 44247](#)).

1.4.26 Supervisors. Supervisors shall:

- a. Notify the Center safety office when a mishap or close call occurs ([Requirement 44249](#)).
- b. Support the incident commander as he/she secures and safes the mishap site ([Requirement 44250](#)).
- c. Initiate drug testing after a mishap if the mishap results in a fatality or personal injury requiring immediate hospitalization or in damage estimated to be in excess of \$10,000 to government or private property ([Requirement 44251](#)).
- d. Assist the investigating authority, as requested ([Requirement 44252](#)).
- e. Complete the initial mishap or close call report in accordance with the Center Mishap Preparedness and Contingency Plan ([Requirement 44253](#)).

1.4.27 All Employees. All employees shall:

- a. If witness to, or involved in, a NASA mishap or close call, immediately notify both emergency response (e.g., 911, fire, ambulance, Center security office) of the need for assistance and a supervisor, management official, or a safety/health staff member of the circumstance of the mishap or close call ([Requirement 44255](#)).
- b. Complete witness statements prior to leaving the mishap investigation site, to the extent possible ([Requirement 44256](#)).
- c. Provide as much information as possible to the investigating authority ([Requirement 44257](#)).

1.4.28 Center's Chief of Aircraft Operations. The Chief of Aircraft Operations shall notify the NTSB of a mishap involving aircraft per paragraph 1.6.6 of this NPR and complete NTSB Form 6120 per paragraph 1.6.8 of this NPR and NTSB requirements ([Requirement 44258](#)).

1.4.29 Contracting Officers. Contracting officers shall:

- a. Involve the Center safety office in the acquisition strategy planning activities for proposed contracts as detailed in

NASA NFS Part 1807, "Acquisition Planning" ([Requirement 44260](#)).

b. Incorporate applicable mishap and close call reporting and investigating procedures and corrective action requirements detailed in the NFS into contracts and grants covering NASA programs and operations ([Requirement 44261](#)).

c. Coordinate with the contractor and subcontractor sites to assist the investigating authority in gaining contractor site access, impound contractor data, and interview contractor personnel as permitted by the contract ([Requirement 44262](#)).

1.4.30 CHMO. The CHMO shall:

a. Serve as the appointing official for a mishap involving a human research subject participating in NASA-funded research at a grantee site, or at another offsite location, and obtain the concurrence from the Chief/OSMA on the investigating authority's membership ([Requirement 44264](#)). In these investigations, the investigating authority composition shall include a safety officer that is trained in mishap investigation ([Requirement 44265](#)).

Note: If the mishap involving a human research subject occurs at a Center, the Center Director will serve as the appointing official per this NPR. For mishaps involving a human research subject the endorsement and authorization for public release processes will remain the same.

b. Serve as an endorsing official for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls involving an injury or fatality ([Requirement 44267](#)).

1.4.31 Mission Support Directorate, Office of Strategic Infrastructure, Aircraft Division (AD). For Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls involving aircraft AD shall serve as an endorsing official ([Requirement 44268](#)).

1.4.32 Office of the General Counsel. The Office of the General Counsel shall:

a. Develop and implement procedures for collateral investigations that will be performed for mishaps and close calls that do not involve criminal activity ([Requirement 44270](#)).

b. Assist the AA/OPA (or designee) in the review of the approved mishap report as it is being prepared for public release ([Requirement 44271](#)).

1.4.33 Chief Engineer. The NASA Chief Engineer shall:

a. Concur on MIB membership for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls ([Requirement 44273](#)).

b. Serve as an endorsing official for Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls ([Requirement 44274](#)).

1.4.34 Roles and responsibilities are summarized in Figure 2.

resulted in a loss of life, a permanent disability, hospitalization, extensive first aid, or lost workday[s] ([Requirement 44282](#)).

1.5.3.1 During this notification, the Center safety office shall provide the following information: the Center name, location of incident, time of incident, number of fatalities (if known), number of hospitalized employees (if known), type of injury (if known), type of damage (if known), contact person, contact person's phone number, and a brief description of the mishap ([Requirement 44280](#)).

1.5.4 Notify OSHA. Within 8 hours of a work-related mishap involving death of a Federal employee, or the hospitalization for inpatient care of three or more employees (provided at least one is a Federal employee), the Center safety office shall notify OSHA by calling the area office nearest the site of the mishap or OSHA's toll-free number, 1.800.321.6742 ([Requirement 44283](#)).

1.5.4.1 OSHA notification is required for any fatality or three or more hospitalizations that occur up to 30 workdays after the respective mishap ([Requirement 44284](#)).

1.5.4.2 The Center safety office shall persist in making contact with OSHA to provide this report until OSHA has acknowledged receipt of the report ([Requirement 44285](#)).

1.5.4.3 In notifying OSHA, the Center safety office shall provide OSHA with the following information: the establishment name, location of incident, time of incident, number of fatalities (if known), number of hospitalized employees (if known), contact person, contact person's phone number, and a brief description of the mishap ([Requirement 44286](#)).

1.5.4.4 After notifying OSHA, the Center safety office shall inform OSMA/SARD that an oral report has been provided to OSHA ([Requirement 44287](#)).

1.5.5 Within 24 hours of a Type A mishap, Type B mishap, high-visibility mishap, or high visibility close call, the Center safety office shall follow up the initial phone notification by sending an electronic notification to OSMA/SARD that includes the following information: Center submitting report; author of report; author's phone number and mail code; date report submitted; time report submitted; incident date; incident time; incident general location; exact location (if known); responsible organization; organization's point of contact; point of contact's phone number and mail code; mission affected; program impact (if known); number and type of injuries or fatalities (if known); type of damage to equipment, flight hardware, flight software, or facilities; estimate of direct cost of damage; and a brief description of the mishap or close call ([Requirement 44288](#)).

1.5.6 Report Criminal Activity Associated with NASA Mishaps to the Office of Inspector General (OIG) and to either the Office of the General Counsel or Center Chief Counsel.

1.5.6.1 The OIG and the Center's Office of the Chief Counsel or the NASA Office of the General Counsel shall be notified if it is suspected that a mishap resulted from criminal activity ([Requirement 44290](#)).

1.5.6.2 Any facts related to criminal activity in connection with a mishap shall be referred to the OIG ([Requirement 44291](#)). Privileged witness statements will be protected to the extent provided by law.

1.6 Additional Notification and Reporting Requirements for Aircraft Investigations

1.6.1 NASA employees shall report immediately to the Center safety office any of the aircraft mishaps or anomalies described in Figure 3, paragraph 1.2, and paragraph 1.6.2 of this NPR ([Requirement 44294](#)).

Note: Effective March 8, 2010, the NTSB has required additional reporting requirements, which are documented in 49 CFR Part 830 and reflected in this NPR.

All Aircraft	
<input type="checkbox"/>	Flight control system malfunction or failure.
<input type="checkbox"/>	All aircraft accidents with substantial damage.
<input type="checkbox"/>	Inability of any required flight crewmember to perform normal flight duties as a result of injury or illness.
<input type="checkbox"/>	Failure of structural components of a turbine engine, excluding compressor and turbine blades and vanes.
<input type="checkbox"/>	In-flight fire.
<input type="checkbox"/>	Aircraft collision in flight.
<input type="checkbox"/>	Damage to property other than the Agency aircraft.
<i>For large multiengine aircraft (more than 12,500 pounds maximum certificated take-off weight)</i>	
<input type="checkbox"/>	In-flight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces.
<input type="checkbox"/>	Sustained loss of the power or thrust produced by two or more engines.
<input type="checkbox"/>	An evacuation of an aircraft in which an emergency egress system is used.
<input type="checkbox"/>	An aircraft is overdue and is believed to have been involved in a mishap or close call.

Figure 3. NTSB Reportable Events (Per 49 CFR Part 830).

All Aircraft	
<input type="checkbox"/>	Flight control system malfunction or failure.
<input type="checkbox"/>	All aircraft accidents with substantial damage.
<input type="checkbox"/>	Inability of any required flight crewmember to perform normal flight duties as a result of injury or illness.
<input type="checkbox"/>	Failure of structural components of a turbine engine, excluding compressor and turbine blades and vanes.
<input type="checkbox"/>	In-flight fire.
<input type="checkbox"/>	Aircraft collision in flight.
<input type="checkbox"/>	Damage to property other than the Agency aircraft.
<i>For large multiengine aircraft (more than 12,500 pounds maximum certificated take-off weight)</i>	
<input type="checkbox"/>	In-flight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces.
<input type="checkbox"/>	Sustained loss of the power or thrust produced by two or more engines.
<input type="checkbox"/>	An evacuation of an aircraft in which an emergency egress system is used.
<input type="checkbox"/>	An aircraft is overdue and is believed to have been involved in a mishap or close call.

Figure 4: Information Required for All Agency Aircraft Mishaps and Close Calls

1.6.2 Employees shall report unexpected aircraft departure from controlled flight for all aircraft except the following high performance jet/test aircraft which can experience departure from controlled flight when engaged in flight test activities: F-15, F-16, F/A-18, T-38, OV-10, and T-34 (Requirement 44295). These aircraft are exempt because it is a common occurrence for a high performance jet/test aircraft that does dynamic maneuvering to depart from controlled flight.

1.6.3 Immediately after the occurrence of an aviation mishap or NTSB-defined mishap or close call, the Center aircraft operator shall provide all the information listed in Figure 4 to the Center safety office and the Center Chief of Aircraft Operations (Requirement 44297).

1.6.4 The Center safety office shall notify OSMA/SARD and AD of any aircraft mishap or close call as listed in paragraph 1.6.2 and Figure 3 of this NPR ([Requirement 44298](#)).

Note: Figure 3 and paragraph 1.6.2 are NTSB reporting requirements. Consequently, this requirement is in addition to reporting all aircraft-related Type A mishaps, Type B mishaps, high-visibility mishaps, and high-visibility close calls to the OSMA/SARD.

1.6.5 The Center safety office shall ensure that for aircraft mishaps and close calls all information listed in Figure 4 of this NPR (with the exception of the pilot's name) is entered in IRIS ([Requirement 44300](#)).

Note: Close calls involving aircraft may be entered into the NAARS in lieu of IRIS.

1.6.6 The Center's Chief of Aircraft Operations or his/her designee shall immediately notify the NTSB, in accordance with 49 CFR Part 830, of any aircraft mishap, incident, or close call listed in Figure 3 and paragraph 1.6.2 of this NPR and notify OSMA/SARD and the Office of Strategic Infrastructure, Aircraft Division (OSI/AD) that NTSB notification has been completed ([Requirement 44302](#)).

1.6.7 In the event that the NTSB exercises its authority to investigate a NASA aircraft mishap, NASA shall conduct a separate investigation in accordance with this NPR ([Requirement 44303](#)).

1.6.8 Within 10 workdays of an aircraft mishap or close call that meets the reporting requirements as defined in Figure 3 and paragraph 1.6.2 of this NPR, the Center Chief of Aircraft Operations shall submit an NTSB Form 6120 to the NTSB regional office nearest to the location of the mishap or close call ([Requirement 44304](#)).

1.6.9 An unmanned aerial vehicle (UAV) is not currently considered an aircraft by the NTSB, consequently NTSB reporting requirements are not applicable to a UAV unless personnel are injured or the UAV comes down in a populated area outside a Center's gates.

1.7 Investigation Products for each Classification Level/Type of Investigation

1.7.1 The investigating authority shall conduct an investigation and include the following products in the mishap report according to the requirements listed in Figure 5:

- a Investigating authority and ex officio signatures per paragraph 6.1.9 and 6.1.10 ([Requirement](#)).
- b Each advisor's signature per paragraph 6.1.11 ([Requirement](#)).
- c. List of the investigating authority's consultants ([Requirement 44310](#)).
- d. An executive summary that does not contain privileged or proprietary information, material subject to the Privacy Act, ITAR information, or EAR information ([Requirement 44311](#)).
- e. The OSHA Final Mishap Summary (OSHA 301 Form: Injury and Illness Incident Report, or an equivalent form), if the mishap is an OSHA recordable incident ([Requirement 44312](#)).
- f. Description of the type of data gathered and evaluated during the investigation ([Requirement 44313](#)).
- g. Narrative description of the facts including what, when, and where ([Requirement 44314](#)).
- h. Timeline ([Requirement 44315](#)).
- i. Description of all structured analysis techniques used and how they contributed to determining the findings ([Requirement 44316](#)).
- j. Event and causal factor tree or similar graphical representation of the mishap ([Requirement 44317](#)).
- k. Description explaining why the mishap/close call occurred including all finding(s) such as proximate cause(s), root cause(s), contributing factor(s), failed barrier(s), observation(s), and the evidence upon which the findings are based ([Requirement 44318](#)).
- l. Conclusions and recommendations ([Requirement 44319](#)).
- m. Minority report, if there is one ([Requirement 44320](#)).

	Classification Level & Investigation Type					
	High-Visibility Mishap or Close Call	Type A	Type B	Type C	Type D	Close Call
Investigating Authority	MIB ¹	MIB (at least 5 members)	MIB (at least 3 members)	MIT or MI	MIT or MI	MIT or MI
Required Products	All (a-m) ¹	All (a-m)	All (a-m)	a-e, g, l, k, m	a, b, g, k, l, m	a, b, g, k, l, m
Appointing Official	MDAA (For Offsite, In-flight or Program Contractor Site) ¹ or CD or AA/OIA (For Center Onsite, or Offsite Center Support Contractor) ¹ or CHMO (For Offsite Human Research Subjects)	Administrator ² AA ² or CD or AA/OIA (For Center Onsite or Offsite Center Support Contractor) or MDAA (For Offsite, In-space flight or at a Program Contractor Site) or CHMO (For Offsite Human Research Subjects)	CD or AA/OIA (For Center Onsite or Offsite Center Support Contractor) or MDAA (For Offsite, In-space flight or at a Program Contractor Site) or CHMO (For Offsite Human Research Subjects)	CD designee or AA/OIA designee (For Center Onsite or Offsite Center Support Contractor) or MDAA Designee (For Offsite, In-space flight or at a Program Contractor Site) or CHMO (For Offsite Human Research Subjects)	CD designee or AA/OIA designee (For Center Onsite or Offsite Center Support Contractor) or MDAA Designee (For Offsite, In-space flight or at a Program Contractor Site) or CHMO (For Offsite Human Research Subjects)	CD designee or AA/OIA designee (For Center Onsite or Offsite Center Support Contractor) or MDAA Designee (For Offsite, In-space flight or at a Program Contractor Site) or CHMO (For Offsite Human Research Subjects)
Concurrence on MIB Membership	Chief/OSMA ¹ Chief Engineer ¹ CHMO ⁷	Chief/OSMA Chief Engineer CHMO ⁷	Chief/OSMA Chief Engineer CHMO ⁷	CHMO ⁷	CHMO ⁷	CHMO ⁷
Endorsing Officials	Appointing Official ¹ , Chief/OSMA ¹ , Chief Engineer AMD ^{1,3} , Procurement ¹ , CHMO ^{1,4} , Other ¹	Appointing Official, Administrator ² , Chief/OSMA Chief Engineer AMD ³ , CHMO ⁴ , Procurement ⁵ , Other ⁵	Appropriate MDAA, Appointing Official, Chief/OSMA Chief Engineer AMD ³ , CHMO ⁴ , Procurement ⁵ , Other	Appointing Official and Center Process	Appointing Official and Center Process	Appointing Official and Center Process
Officials Reviewing Mishap Report Prior to Authorization for Public Release	General Counsel ¹ , OPA ¹ , NASA Export Administrator ¹ , OSPP (Security) ¹	General Counsel, OPA, NASA Export Administrator, OSPP (Security)	General Counsel, OPA, NASA Export Administrator, OSPP (Security)	Center Chief Counsel, Center PAO, Center Export Administrator, Center Process	Center Chief Counsel, Center PAO, Center Export Administrator, Center Process	Center Chief Counsel, Center PAO, Center Export Administrator, Center Process

Figure 5. Classification Level & Investigation Type with Corresponding Appointing Official, Endorsing Officials, and Required Products in the Mishap Report

KEY:

1. Occurs when the Administrator, AA, MDAA, CD, Chief/OSMA, or CHMO decides that the high-visibility mishap or high-visibility close call should be investigated by a MIB.
2. Only when Administrator desires.
3. Only when the mishap or close call involves an aircraft.
4. Only when the mishap or close call involves an injury or fatality.
5. When needed.
6. When the mishaps or close calls involve Mission Directorate programs/projects/activities that are not managed by a Center, program, or project, where the mishaps or close calls have occurred outside the Center+s gates.
7. Onsite human research subjects.

1.7.2 For close calls, where the potential for a Type A mishap or Type B mishap is significant, the Center Safety and Mission Assurance (SMA) director may consider application of a MIB or MIT investigation and their associated products. Serious workplace hazards previously unidentified and discovered as a result of inspections, audits, surveys, or concerns shall be investigated in the same manner as close calls ([Requirement 44321](#)).

1.7.3 For Type B mishaps, Type C mishaps, Type D mishaps, and close calls involving a single person, where the injury/illness occurred because an individual fell down the stairs, slipped or tripped on the floor or ground, experienced a musculoskeletal disorder (both cumulative trauma or acute) while performing routine office duties, was bitten by an insect, and/or aggravated a preexisting medical condition, the mishap investigation may be

performed by one trained mishap investigator without the support from an ex officio.

***Rationale:** Brown recluse spider bites result in hospitalization. They do not require a full MIB, complex investigation, and/or report.*

1.7.4 The CD or ED/OHO shall elevate the level of investigation and required products of any mishap or close call upon the request of a higher authority, such as the Administrator, an Associate or Assistant Administrator, or upon his/her discretion ([Requirement 44324](#)).

1.8 Recording Requirements

1.8.1 Within 24 hours, the Center safety office shall ensure that all NASA mishaps and close calls are recorded in IRIS and include the following information: Center submitting report; author of report; author's phone number and mail code; date report submitted; time report submitted; incident date; incident time; incident general location; exact location (if known); responsible organization; organization's point of contact; point of contact's phone number and mail code; mission affected; program impact (if known); number and type of injuries or fatalities (if known); type of damage to equipment, flight hardware, flight software, or facilities; estimate of direct cost of damage; and a brief description of the mishap or close call ([Requirement 44326](#)).

Note: Close calls involving aircraft may be entered into the NAARS in lieu of IRIS.

1.8.2 For mishaps or close calls involving injury, the occupational health representative or other medical person shall provide the appropriate medical information regarding the person(s) injured and the nature of the injury(s) to the Center safety office for inclusion in IRIS ([Requirement 44328](#)).

1.8.3 The Center safety office shall record mishaps involving injury or illness to NASA civil service employees on the OSHA 300 Log as required by 29 CFR Part 1904.7 ([Requirement 44329](#)).

1.8.4 The Center safety office shall ensure that the information recorded in IRIS is updated as specified in paragraph 6.5 ([Requirement 44330](#)).

1.9 Collateral Investigations

1.9.1 The NASA investigating authority performing the safety investigation per this NPR shall have primacy over other Agency collateral investigations, with the exception of OIG criminal investigations ([Requirement 44332](#)).

1.9.2 The investigating authority shall not distribute witness statements, notes, or transcripts of witness testimony taken during interviews, or medical records to the collateral investigation board or any other Agency, unless ordered in a court of law ([Requirement 44333](#)).

1.9.3 In an unusual case, the MIB chair shall release privileged witness testimony and related material to the OIG upon receipt of a written request that is signed by the Inspector General or Deputy Inspector General, addressed to the NASA Administrator or Deputy Administrator, and forwarded to the MIB chair from the Administrator's office ([Requirement 44334](#)).

Note: The OIG respects and, as a general rule, will defer to the disclosure restrictions attendant to NASA mishap investigations. Upon receipt of such testimonial information, the OIG will consider it to be confidential witness testimony and will treat it as such to the full extent required by the Inspector General Act of 1978.

1.9.4 The investigating authority may provide (at their discretion) the collateral investigation board with access to factual data, physical evidence (with the exception of privileged witness statements, notes and transcripts of privileged testimony, and medical records), analysis, and any other information that will be contained within the mishap investigation report authorized for public release.

1.9.5 Members of the investigating authority shall not participate in both collateral investigations or contractor and safety investigations for the same mishap or at the same time ([Requirement 44337](#)).

1.10 Investigations by Outside Authorities

1.10.1 NASA shall support investigations of NASA mishaps by other Federal agencies authorized to investigate NASA mishaps ([Requirement 44339](#)).

1.10.2 NASA shall support investigations of mishaps experienced by other Federal agencies, foreign participants, and private industry in accordance with agreements ([Requirement 44340](#)).

1.10.3 If the NASA appointing official accepts an investigation by other authorities or contractors that is independent and adequately addresses proximate cause(s), root cause(s), and contributing factor(s), the appointing official is not

required to conduct a separate NASA investigation.

1.10.4 Examples of situations where investigations by other parties may be accepted include the following:

- a. When a Presidential Commission is appointed pursuant to the NASA Authorization Act of 2005 (Public Law 109-155, Section 821) to investigate the loss of a Space Shuttle, the loss of ISS or its operational viability, the loss of any other United States space vehicle carrying humans that is owned by the Federal Government or that is being used pursuant to a contract with the Federal Government, or the loss of a crew member or passenger of any space vehicle described in this subsection.
- b. Traffic mishaps involving NASA employees in the course of their duty when investigated by local authorities (i.e., sheriff, state police, coroners) having jurisdiction.
- c. An injury or fatality where there is substantial reason to believe the mishap or close call is the result of a criminal or terrorist act to NASA employees and is investigated by local or Federal law enforcement authorities such as the Federal Bureau of Investigation; the Bureau of Alcohol, Tobacco, Firearms, and Explosives; the Department of State; the Drug Enforcement Agency; the Department of Homeland Security; or the OIG.
- d. An injury or fatality as a result of a commercial transportation mishap involving NASA personnel on official business that is investigated by authorities having jurisdiction, such as the Federal Aviation Administration and the NTSB.

1.10.5 Contractor and Grantee Mishaps. In those cases that are not NASA mishaps (i.e., solely involve a contractor or grantee mishap or close call at an offsite location, arising out of work performed under a NASA contract and the contractor/grantee is required to investigate pursuant to NFS 1852.223-70), the NASA appointing official is not required to appoint a separate NASA investigating authority unless the contractor's/grantee's mishap report indicates that a NASA policy or procedure was a causal factor or contributing factor and a NASA change is warranted.

1.10.5.1 A contractor onsite injury or illness that is classified as a Type C mishap, Type D mishap, or Close Call may be investigated by the contractor per their contract. The mishap report must be delivered to NASA, and NASA has the option of completing the endorsement process. (Requirement 44348)

1.10.6 When the onsite incident has been classified as a Type D mishap or a close call involving government property damage (including flight hardware, ground processing equipment, and/or the ground facility), the NASA appointing official may allow contractor investigation of the mishap per their contract provided the following are true:

- a. NASA serves as the appointing official and approves the investigating authority.
- b. The investigating authority has the same membership (e.g., disciplines and training) as defined in this NPR (NPR 8621.1) with the exception that all members and advisors are contractor personnel.
- c. The investigating authority performs the investigation per this NPR with the exception of taking privileged witness statements. (Rationale: NASA can not protect privileged witness statements taken by a contractor. Consequently, the contractor is not authorized to grant privilege.)
- d. The investigating authority produces the products listed in Figure 5.
- e. The NASA appointing official reviews and endorses the report.

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