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# NASA Procedural Requirements

**COMPLIANCE IS MANDATORY**

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## **Subject: Safety and Mission Assurance Audits, Reviews, and Assessments**

**Responsible Office: Office of Safety and Mission Assurance**

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## **Chapter 2. Institutional/Facility/Operational (IFO) SMA Audits**

### 2.1 Objective of IFO SMA Audits

2.1.1 IFO SMA Audits verify the flow-down of Federal, State, local, and Agency SMA and technical directives, policies, and requirements into organization requirements and procedures, and assess whether local practices reflect these procedures and processes. The purpose of the audits is twofold:

- a. To provide management with an independent, objective, and constructive evaluation of the compliance of the institution, facility, and operation with the applicable BRS.
- b. To assess the effectiveness of implementation of SMA directives, policies, and requirements in achieving desired outcomes relevant to the areas being audited.

2.1.2 Headquarters-led IFO SMA Audits are conducted by OSMA's Review and Assessment Division. Center-led IFO SMA Audits are undertaken on behalf of the Center Director and are conducted by the Center SMA Director and SMA staff using Center requirements documents to verify organizational compliance with the applicable IFO BRS.

2.1.3 IFO SMA Audits verify compliance with SMA-related requirements (both SMA process and technical) contained in applicable documents. These requirement areas within the IFO BRS include, but are not limited to, the following:

- a. Public/Worker Safety: NASA Safety Manual, personnel certifications for hazardous operations, and personnel safety requirements.

b. Facility System Safety: facility safety, fire protection, and underwater facility and non-open water operations safety requirements.

c. Mishap Investigation.

d. Equipment Safety: metrology and calibration, lifting devices and equipment, pressure vessels and systems, and Government Industry Data Exchange Program (GIDEP) Alerts.

e. Explosives Safety.

f. Range Safety.

g. Electrical Safety.

2.1.4 IFO SMA Audits are conducted onsite at the Center's organizational level. Verification of compliance with SMA process and technical requirements is accomplished by: 1) reviewing organization SMA requirements and procedures to ensure that Agency-level SMA process and technical requirements are appropriately flowed down and implemented, 2) reviewing documentation and records of completed work and training, 3) assessing the capability of the organization to implement the SMA requirements, 4) interviewing organization personnel, 5) observing the practices that reflect the organization's procedures and processes, and 6) verifying the effective implementation of corrective actions.

2.1.4.1 It is not the intent of the IFO SMA Audit process to duplicate the effort of other audits; rather, the intent is to leverage audits, reviews, and assessments conducted by other NASA or governmental organizations or certified nongovernmental organizations to facilitate verification of compliance with requirements. IFO SMA Audits will include reviews of previous findings, corrective actions, and an evaluation of the effectiveness of those corrective actions.

2.1.4.2 Required actions resulting from completed audits are tracked to effective completion via a closed-loop corrective action system.

2.1.5 The Operations and Engineering Panel (OEP), as chartered by NPR 8715.3, NASA Safety Manual, Appendix K, is one component of the IFO SMA Audit Process. The OEP provides an independent technical engineering and operational review of specifically selected NASA facilities and operations in support of the OSMA, the Headquarters Office responsible for institutional management, NASA Mission Directorates, and NASA Centers and Component Facilities, including JPL. The OEP produces written evaluations and recommendations to improve NASA engineering and operations.

## **2.2 IFO SMA Audit Roles and Responsibilities**

2.2.1 The Agency Associate Administrator shall:

2.2.1.1 Ensure that Centers comply with and implement institutional, facility, and operational-related SMA and technical requirements (Requirement).

2.2.1.2 Ensure that Centers have adequate resources to perform IFO SMA Audits and to support Headquarters-led IFO SMA Audits (Requirement).

2.2.2 The Chief Safety and Mission Assurance Officer shall:

2.2.2.1 Implement the Headquarters-led IFO SMA Audit process (Requirement).

2.2.2.2 Develop annual integrated audit plans for OSMA (Requirement).

2.2.2.3 Work with the NASA Chief Engineer and Associate Administrator for Institutions and Management to define the applicable IFO BRS (Requirement).

2.2.2.4 Provide an auditor selection and screening process to ensure that potential audit team members have the requisite institutional, facility, and/or operational safety experience and competency to participate in the Headquarters IFO SMA Audit process (Requirement).

2.2.2.5 Conduct Headquarters IFO SMA Audits on a biennial basis at all NASA Centers, Component Facilities, and the JPL NASA Management Office and include all focus areas applicable to each organization (Requirement).

2.2.2.6 Provide NASA Centers access to current Headquarters IFO SMA Audit schedule (Requirement).

2.2.2.7 Select the IFO SMA Audit requirement set for review from the applicable IFO BRS with concurrence from the responsible Center SMA organization (Requirement).

2.2.2.8 Request the Center to identify participants to act as audit liaisons and to facilitate assistance from the Center SMA organization (Requirement).

2.2.2.9 Conduct follow-up activities to verify implementation of effective corrective and preventive actions for Headquarters IFO SMA Audit findings (Requirement).

2.2.10 Provide feedback of IFO SMA Audit results and corrective actions to affected/applicable institutional offices within Headquarters organizations.

2.2.3 The NASA Chief Engineer shall:

2.2.3.1 Ensure that relevant program Chief Engineer(s) supports the OSMA Review and Assessment Division by explicitly defining and documenting the applicable IFO BRS and the associated OQE (Requirement).

2.2.3.2 Assist the Chief Safety and Mission Assurance Officer in defining the applicable IFO BRS (Requirement).

2.2.4 The Associate Administrator for Institutions and Management shall:

2.2.4.1 Assist the Chief Safety and Mission Assurance Officer in selecting the pertinent set of requirements for audit from the IFO BRS (Requirement).

2.2.5 Center Directors shall:

2.2.5.1 Provide the necessary review materials to facilitate the audit planning stage of the IFO SMA Audit (Requirement).

2.2.5.2 Identify and provide subject matter experts to the OSMA as requested for Headquarters-led IFO SMA Audit activities (Requirement).

2.2.5.3 Provide the logistic and resource support required for successful execution of Center-led IFO SMA Audit activities (Requirement).

2.2.5.4 In concert with the Center SMA Director and applicable facility or project

manager, provide a Corrective Action Plan to the OSMA for resolution of Headquarters-led IFO SMA Audit findings within 60 calendar days of the audit (Requirement).

2.2.5.5 Present periodic status of IFO SMA Audit corrective actions to the Chief Safety and Mission Assurance Officer or designee every 60 calendar days thereafter until all findings have been closed (Requirement).

2.2.6 Center SMA Directors shall:

2.2.6.1 Support and participate in the IFO SMA Audit process (Requirement).

2.2.6.1.1 Incorporate IFO SMA Audit activities into Center SMA plans (Requirement).

2.2.6.1.2 Provide to the IFO SMA Audit Team Leader all necessary review materials to facilitate the planning and execution of the IFO SMA Audit (Requirement).

2.2.6.1.3 Identify to the IFO SMA Audit Team Leader other relevant IFO audits, reviews, or assessments that may have previously verified compliance with requirements (Requirement).

2.2.6.1.4 Provide logistic and resource support required for the execution of the IFO SMA Audit Plan (Requirement).

2.2.6.1.5 Coordinate with Center procurement and Center institutions, facilities, and/or operations personnel to ensure that contracts provide for adequate contractor support of Headquarters-led and Center-led IFO SMA Audit activities.

2.2.6.1.6 Prepare and present a Closed-loop Corrective Action Plan to the Chief Safety and Mission Assurance Officer or designee for resolution of Headquarters-led IFO SMA Audit findings within 60 calendar days of the audit (Requirement).

2.2.6.1.7 Submit a Closed-loop Corrective Action Plan to the Center Director for resolution of Center-led IFO SMA Audit findings (Requirement).

2.2.6.2 Establish a Center-led IFO SMA Audit process by planning, obtaining Center funds, and executing Center-based IFO SMA Audits to verify organizational compliance with institutional, facility, operational, and SMA process and technical requirements (Requirement).

2.2.6.3 Present status of Headquarters-led IFO SMA Audit corrective actions to the Chief Safety and Mission Assurance Officer or designee every 60 calendar days thereafter until all findings have been closed (Requirement).

2.2.7 Center Organizations with responsibility for institutions, facilities, or operations shall:

2.2.7.1 Incorporate IFO SMA Audit activities into program/project plans (Requirement).

2.2.7.2 Support the audit plan by providing program/project logistic and resource support required for successful execution of and response to the IFO SMA Audit (Requirement).

2.2.7.3 Coordinate with Center SMA and Center procurement to ensure that contracts provide for adequate contractor support of Headquarters-led and Center-led IFO SMA Audit activities.

2.2.7.4 Provide a Closed-loop Corrective Action Plan to the OSMA for resolution of

Headquarters-led IFO SMA Audit findings within 60 calendar days of the audit (Requirement).

2.2.8 SMA Managers (matrixed/assigned to the Program/Project Manager) shall:

2.2.8.1 Support the IFO SMA Audit by providing the IFO SMA Audit Team Leader the necessary review materials to facilitate the audit planning stage (Requirement).

2.2.8.2 Identify to the IFO SMA Audit Team Leader any other relevant audits, reviews, or assessments that may have previously verified compliance with requirements (Requirement).

2.2.8.3 In concert with the Center Director, Center SMA Director, and Program/Project Manager, provide a Closed-loop Corrective Action Plan to the OSMA within 60 calendar days for resolution of Headquarters-led IFO SMA Audit findings (Requirement).

2.2.9 Headquarters- or Center-led IFO SMA Audit Team Leader shall:

2.2.9.1 Develop and execute the IFO SMA Audit Plan (Requirement), including:

2.2.9.1.1 Coordinate the audit with the organization to be audited by identifying the general scope of the audit and the expected start and finish dates (Requirement).

2.2.9.1.2 Recruit subject matter experts to be audit team members (Requirement).

2.2.9.1.2.1 Audit team members shall be independent of the organization or program/project being audited (Requirement).

2.2.9.1.2.2 Subject matter experts will be recruited from NASA Headquarters and Center organizations with IFO SMA policy/procedures responsibilities and may also include other government agency experts.

2.2.9.1.3 Ensure that each team member is qualified to conduct the IFO SMA Audit; i.e., has requisite institutional, facility, and operational SMA experience and training (Requirement).

2.2.9.2 Provide findings in a formal report to the appropriate Center Director, SMA Director, Program Manager, and affected institutional organizations (Requirement).

2.2.9.3 Ensure that appropriate records of audit activities are maintained (Requirement).

2.2.9.4 Ensure that each auditor collects and documents the OQE verifying the Center meets the IFO BRS appropriate to the audit objective(s) (Requirement).

Note: Information derived from IFO SMA Audits often contains lessons learned and best practices. Headquarters- or Center-led IFO SMA Audit Team Leaders may share this information via appropriate Web-based resources; e.g., Lessons Learned Information System (LLIS), Process Based Mission Assurance-Knowledge Management System (PBMA-KMS).

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