


## ***Revision D***



# **Development and Utilization of Annual Operating Agreements (AOA)**

  
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Date

### DOCUMENT HISTORY LOG

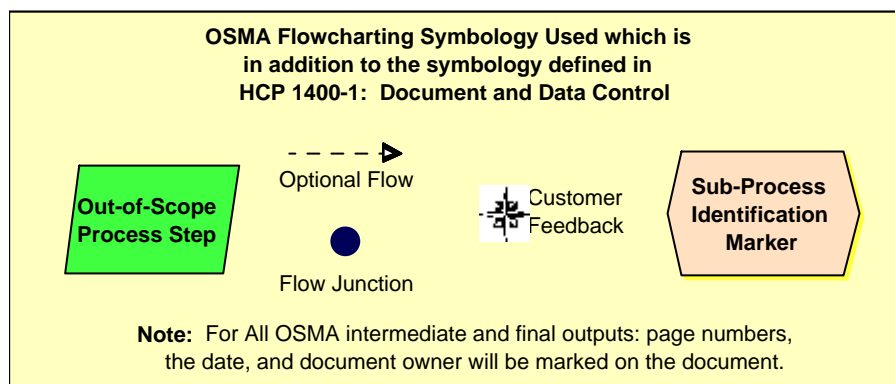
Status (Draft/ Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		January 13, 2000	
Revision	A	April 14, 2000	Editorial corrections to Section 5 flowchart formatting and steps 6.03, and 6.04; Modified step 6.05, and 6.07 retention to 2 <sup>nd</sup> Quality Record (new #) in Section 7; Added new 1 <sup>st</sup> Quality Record.
	B	February 1, 2002	Added customer list, customer feedback to sections 5 and steps 6.03, 6.04, and 6.07. Editorial corrections to step 6.02. Technical correction to steps 6.04 and 6.05
	C	March 31, 2004	Editorial and organizational changes to all sections.
	D	November 9, 2007	Editorial and organizational changes to all sections

HOWI Author: MSD/AOA Manager

OSMA Staff Member Responsible for this HOWI: MSD/Director

Customers for this HOWI: Internal: Chief/SMA

External: none



## 1. Purpose

The purpose of this Office of Safety and Mission Assurance (OSMA) Headquarters Office Work Instruction (HOWI) is to document the process for managing the development of the Annual Operating Agreements (AOA) by NASA Centers and ensuring approval of the AOAs by the NASA Associate Administrator. This OSMA HOWI also specifies the Quality Records associated with the process.

## 2. Scope and Applicability

This HOWI is applicable to the Chief, Safety and Mission Assurance (Chief/SMA), the OSMA Mission Support Division (MSD), the OSMA Safety and Assurance Requirements Division (SARD), the OSMA Center Point of Contact (POC), and the OSMA AOA Manager.

## 3. Definitions

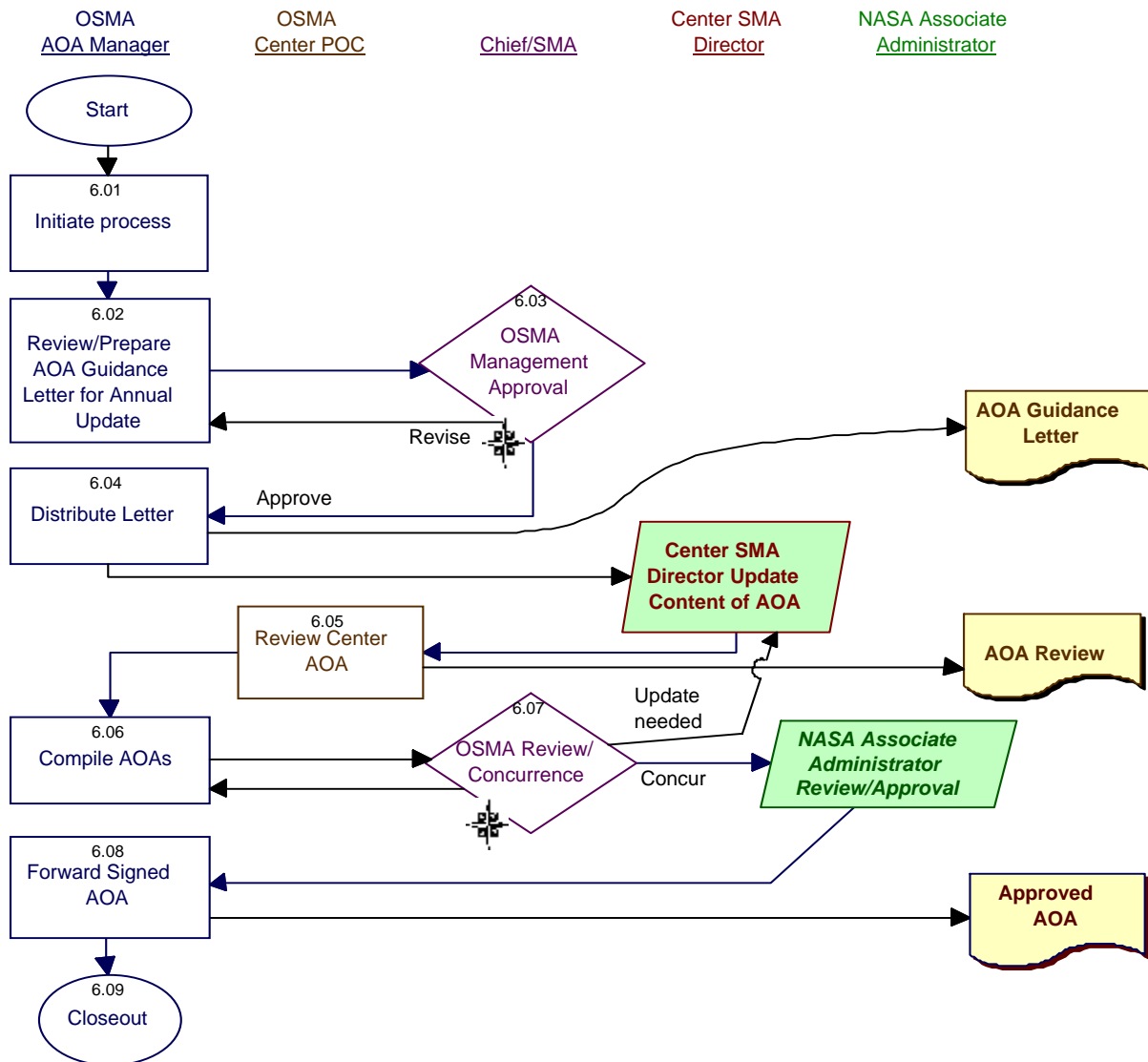
- 3.1. Annual Operating Agreement (AOA): A NASA Center SMA management plan which defines customer requirements, SMA processes, resources required to meet SMA customer requirements, and the metrics defining effectiveness and efficiency of SMA processes.
- 3.2. Chief/SMA: Chief, Safety and Mission Assurance
- 3.3. MSD: Mission Support Division
- 3.4. OSMA: Office of Safety and Mission Assurance
- 3.5. POC: Point of Contact
- 3.6. RAD: Review and Assessment Division
- 3.7. SARD: Safety and Assurance Requirements Division
- 3.8. SMA: Safety and Mission Assurance

## 4. Reference Documents

The documents listed in this section are used as reference materials for performing the processes covered by the Quality Management System (QMS). Since all NASA Headquarters Level 1 (QMS Manual) and Level 2 (Headquarters Common Processes) documents are applicable to the QMS, they need not be listed in this section unless specifically referenced in this OSMA HOWI.

- 4.1. [NPD 8700.1: NASA Policy for Safety and Mission Success](#)
- 4.2. Office of Safety and Mission Assurance Functional Leadership Plan

## 5. Flowchart



## 6. Procedure

### 6.01 AOA Manager Initiate Process

Annually, the process will normally commence in March for all AOAs. The process can also be initiated at any time at the request of the Chief/SMA if it is felt that a Center AOA update is needed. Appendix A provides the AOA performance specification for this process.

6.02 AOA Manager                      Review and Prepare AOA Guidance Letter for Annual Update  
The previous year's AOA Guidance Letter is reviewed and updated to reflect current NASA SMA strategies per updates to NASA policies and strategic planning. The letter is prepared for Chief/SMA signature. The target is for the annual AOA Guidance Letter to reach the Center Directors on or before July 15.

6.03 Chief/SMA                          OSMA Management Approval  
The Chief/SMA reviews and signs the letter.

6.04 AOA Manager                      Distribute Letter  
The signed AOA Guidance Letter is distributed to the Center Directors with copies to the NASA Associate Administrator. The letter is filed as a quality record as Chief/SMA Correspondence per HOWI 1450-GB27.

*The Center Directors, Center SMA Directors, and other Center organizations with SMA functional responsibilities will update the Center AOA to conform to the AOA guidance letter, Center and Agency policies, and strategic plans. The updated Center AOA, with appropriate signatures, is forwarded to the Chief/SMA for review and approval on or before Nov 15.*

6.05 OSMA Center POC                  Review Center AOA  
The OSMA Center POC serves as the primary interface with the Center's SMA management for the development of the AOA. The POC tracks the Center's SMA goals, objectives, and metrics and provides these results as inputs to the Center SMA Director's annual performance review. The POC obtains concurrence from HQ offices whose resources are impacted as described in the AOA. If concurrence can not be obtained, then unresolved issues will be forwarded to the Deputy Chief/SMA and the Chief/SMA.

6.06 AOA Manager                      Compile AOAs  
The AOA Manager compiles the individual AOAs and prepares a signature package to begin the Chief/SMA and Deputy Chief/SMA review of the AOAs. The signature package contains the Center AOAs, the OSMA Center POC AOA review, and any additional supporting materials needed, e.g., concurrences or unresolved issues from affected HQ offices.

6.07 Chief/SMA                          OSMA Review/Concurrence:  
The AOAs are reviewed by the Deputy Chief/SMA and the Chief/SMA. The Chief/SMA concurs on the Center AOA by signing it and forwarding the AOA to the NASA Associate Administrator for approval. If the AOA is not approved, it is returned to the Center SMA Director for revision.

*Afterwards, the AOA is returned to the OSMA AOA Manager for distribution.*

6.08 AOA Manager                      Forward Signed AOAs:  
The AOA Manager distributes the signed AOAs to the Centers and to the OSMA Center POC. The approved AOA is filed as a Quality Record.

6.09 AOA Manager Closeout

When all work is done and the Quality Records have been filed, then the process is closed out.

**7. Quality Records**

<b>Record ID</b>	<b>Owner</b>	<b>Location</b>	<b>Media Electronic /hardcopy</b>	<b>Schedule Number &amp; Item Number</b>	<b>Retention &amp; Disposition</b>
AOA Guidance Letter	OSMA Corres Control	OSMA Chron File	Hardcopy	Schedule: 1 Item: 22	Retire to FRC after becoming 5 years old in 5 year blocks, then retire to NARA when 10 years old
AOA Review	AOA Manager	AOA Manager Files	Hardcopy	Schedule: 1 Item: 7.A	Retire to FRC 2 years after AOA completion then transfer to NARA 10 years after AOA Completion
Approved AOA for each Center with any transmittal letters and associated gap analyses	AOA Manager	AOA Manager Files	Hardcopy	Schedule: 1 Item: 7.A	Retire to FRC 2 years after AOA completion then transfer to NARA 10 years after AOA Completion

## **Appendix A: Performance Specification:**

The OSMA AOA Process Should:

- Ensure that AOA content supports important Agency-wide SMA initiatives; e.g., Agency Safety, risk management.
- Be organized; i.e., every Center's AOA from any year is at our fingertips, presumably in a filing cabinet (quality records) or in official governmental storage.
- Facilitate the identification of resource shortfalls and issues by Center's SMA organizations and document mitigation plans to address these shortfalls and issues.
- Include metrics—not just descriptions of what the metrics are, but actual display of metrics data in graphical format, including at least annually reporting on status of previous year's performance against the declared metrics.
- Support Center SMA organization business processes.
- Facilitate Center updates as warranted by significant changes during the year.
- Provide feedback to the Centers; i.e., copies of signed AOAs and any feedback on the review process.

## **Appendix B: Safety and Mission Assurance (SMA) Annual Operating Agreement (AOA) Guidance**

### OVERVIEW

This AOA guidance provides details on the development of AOAs at each Center and respective Component Facilities. AOAs are Center SMA management plans, focused on customers for SMA products and services. AOAs establish the planning and execution processes to assure available SMA resources are properly allocated for mission success. They are directly linked to the NASA Strategic Management Process, as described in NPD 1000.0, NASA Strategic Management and Governance Handbook, NPD 1001.0, NASA Strategic Plan, NPD 8700.1, NASA Policy for Safety and Mission Success, and the OSMA Functional Leadership Plan. The AOA should be consistent with, and integrated into, the Center's Implementation Plan.

Specific to each Center, the AOA process does three things: (1) assures *planning* for SMA functions to meet the institutional, program, and project requirements; (2) establishes a basis for *negotiation* at the Center level on resource allocations necessary to meet institutional, program, and project requirements; and (3) uses metrics for *management* of the Center's SMA organization. The three basic questions that must be answered in an AOA are: "What are the customer's requirements?" "How effectively were my customer's requirements met?" and "How efficiently were the Center's SMA resources used to meet these requirements?"

An AOA should include both Agency SMA requirements and Center-unique SMA customer requirements. The AOA should also include definitions of these requirements, descriptions of SMA processes and activities to meet these requirements, resource allocations to meet these requirements, any issues, and realistic metrics for determining the effectiveness and efficiency of the SMA processes and activities.

An AOA should reflect the vision, goals, and implementation strategies of the SMA Functional Leadership Plan. The AOA should include activity or process descriptions for *all* of the SMA functional areas that are managed by the Center SMA organization as well as for those areas of OSMA functional cognizance which are not managed by the Center SMA organization (i.e., institutional, fire protection, aviation safety). SMA functional areas under the cognizance of the Chief/SMA, as described in NPD 8700.1, but not under the management cognizance of the Center SMA Director, shall be identified and included.

Appendices C through H provide additional guidance for AOA content. These appendices include:

- Appendix C - Guidelines to Aid Development of an AOA;
- Appendix D - Format to Describe Processes/Activities;
- Appendix E - Format to Describe Resource Allocations for Processes;
- Appendix F - List of Centers and Component Facilities to be Included in AOA;
- Appendix G - List of Safety and Risk Management Processes;
- Appendix H - Risk Management Process Flow Chart.



## **A. Responsibility**

NPD 8700.1, NASA Policy for Safety and Mission Success, establishes the SMA policy for AOAs and defines the following responsibilities:

1. Chief/SMA — Concur on the Centers' or Headquarters' SMA AOA,
2. Deputy Chief/SMA – Concur and/or work to resolve nonconcurrences with affected HQ offices.
3. NASA Associate Administrator (NASA AA) — Approve AOAs (AOAs will be forwarded by OSMA for NASA AA approval),
4. Center Directors — Develop and approve the Center's SMA AOA,
5. Center SMA Functional Manager — Formulate the Center SMA AOA, provide the Safety, Reliability, Maintainability, and Quality Assurance (SRM&QA) products and services described in the AOA, and manage the delivery of SRM&QA products and services in accordance with the AOA.

A Center's SMA organization will also obtain input and concurrence on the AOA from other Center organizations that have management cognizance of SMA functional areas, as described in NPD 8700.1, at the Center, but not under the management cognizance of the SMA Director. This includes a Center's Component Facilities.

## **B. Contents of the AOA**

Required components of the AOA include:

1. **Signature Page** — Include signatures and signature blocks for Center Director, NASA AA, Chief/SMA (concurrence), Center SMA Director, Center SMA senior managers, and customers (as appropriate). Identify signatories by title and name.
2. **Table of Contents** – See example in Section G of this Appendix.
3. **Introduction** — Briefly describe the AOA and its content.
4. **Purpose** — Describe the intent of the AOA, why it is being developed, and how it will be used.
5. **Center SMA Mission** — Provide a brief description of your Center's SMA role and mission. Functional organizational charts are useful here. Identify any SMA functional responsibilities included in NPD 8700.1 but not under the management responsibility of the Center SMA Director.
6. **Linkages** — Describe the linkages between the AOA and strategic planning documents used by other organizations in NASA with which the Center SMA organization must interface to perform its mission.
7. **Assumptions** — Provide the planning and resource assumptions used to develop the AOA. These assumptions can include, but are not limited to, projected funding increases or decreases, funding reserves, FTE increase or decrease, new program/project starts, program/project completion, anticipated changes to on-going programs, response to Headquarters directed initiatives, and others.
8. **Long-term Goals** — Describe the long-term goals (at least 5 years out) that will provide general direction and guidance to the individual activities and work processes employed by the SMA organization in support of the Center and the Agency. These goals should be tied to the SMA Functional Leadership Plan.

9. **Macro-metrics** — Include macro-metrics to measure the SMA organization's performance in meeting top level SMA goals. Macro-metrics are selected metrics that most clearly indicate how well the organization is meeting its goals. They are designed to measure significant organizational goals and to show trends useful to senior management for process improvement.
10. **Resource Shortfalls / Issues** — The internal process of AOA development and update will help determine resource shortfalls (human, financial, capital equipment, or other). Where these shortfalls/issues have not been resolved, they should be identified and included in the AOA with a plan for resolving the shortfall or managing the resultant risk within the Center/Project.
11. **Activity Descriptions and Work Processes** (use format provided in Appendix D).
12. **Resource Allocations for each Process** (use format provided in Appendix E).
13. **Customer Feedback** – Include information on customer feedback related to the organization's performance in meeting its metrics (awards, letters, survey results, or others).
14. **Critical Deliverables** – List the key deliverables associated with the goals and metrics for the year.

### C. Processes/Activities for Special Attention

AOAs should identify processes and activities that support OSMA areas of special attention. These include:

1. **Risk Management** — The AOA should include risk management consulting in the AOA as a service provided by SMA organizations to Program/Project Managers (P/PMs). This service includes assistance to P/PMs in satisfying the risk management requirements of NASA's Program and Project Management Processes and Requirements (NPR 7120.5C and NPR 7120.5D). SMA organizations should be prepared to provide assistance to P/PMs in the preparation of Program/Project Risk Management Plans, as well as provide assistance, as needed, in each of the steps of the risk management process. These include risk identification, analysis, planning, tracking, controlling, and communication and documentation. Appendix H provides a flowchart description of the process.
2. **Mishap Reduction** — The AOA should identify the processes that are in place or will be initiated to reduce or eliminate mishap experiences. As a minimum, these will include the elements of 29 CFR 1960 that are asterisked in the latest Occupational Health and Safety Administration (OSHA) Checklist for Occupational Safety distributed to Center safety organizations. The source document for this is the OSHA Baseline Questionnaire. Line managers responsible for the prevention of employee injuries and property damage due to mishaps should be identified. For mishap reduction processes, the AOA should demonstrate that a monitoring system, such as the Incident Reporting Information System (IRIS), and an appropriate campaign is used to report, track, measure, and reduce close call incidents encountered at the Center. Mishap investigation processes should demonstrate identification of root cause and contributing factors to prevent reoccurrence of the mishap.
3. **Training** — The AOA should identify the processes for developing, institutionalizing, utilizing, and continually improving a comprehensive and properly documented training and career development program for NASA SMA professionals. These processes should include tracking metrics for student participation and course selection and utilization.

4. **Software Assurance** — The AOA should include software assurance activities. In particular, the AOA should identify the processes for implementation of a Software Assurance program that reduces the technical and programmatic risk associated with the delivery of software meeting NASA's technical, schedule, and budgetary needs.
5. **ISO 9001 and AS 9100** — Where appropriate, the AOA should identify the SMA processes that are ISO 9001 and/or AS 9100 certified or planned to be certified.

#### D. **Schedule**

July 1: Centers forward *draft* AOAs for the next Fiscal Year to the designated OSMA point of contact. (This date is intended to ensure that AOAs are developed in parallel with the Fiscal Year budget development.)

November 15: Centers forward approved and signed AOAs for the next Fiscal Year to NASA Headquarters OSMA for OSMA concurrence and forwarding to the NASA AA.

#### E. **Approvals**

AOAs are considered to be a negotiated agreement among Center SMA customers, other Center organizations responsible for performing the safety compliance functions, the SMA organization, and the Center Director. They are approved and signed by the Center SMA Director, the Center Director, and the NASA AA, and are concurred on by the Chief/SMA. Customer or other Center organizations' signatures are also encouraged if appropriate.

##### Approval of the AOA by the Center Director

Approval of AOAs by the Center Director assures that the requested level of SMA support to the Center and Mission Directorate programs and projects is provided in terms of resources (funding and FTEs) and ensures that the appropriate SRM&QA activities are provided to the Center and the Mission Directorate for the management of risk.

##### AOA Concurrence by the Chief/SMA

Concurrence on AOAs by the Chief/SMA demonstrates that OSMA has reviewed the AOA, agrees that appropriate processes and levels of SMA support to the Missions are provided, and concurs that accepted risks are appropriate to maximize mission success.

##### AOA Approval by the NASA AA

Approval of an AOA by the NASA AA demonstrates Agency review, evaluation, and modification, if necessary, of the AOA, commits appropriate levels of SMA support in terms of resources (funding and FTEs), and agrees that the accepted risks are appropriate to maximize mission success.

#### F. **Transmittal of AOAs**

A signed, original AOA plus five copies should be provided to OSMA, addressed to the Director, Mission Support Division (MSD) of OSMA. Both the MSD and the SARD have the responsibility for review of AOAs. MSD is responsible for forwarding the AOAs for Chief/SMA concurrence and for NASA AA approval. A final approved and signed copy of the AOA will be returned to the Center SMA organization.

## Table of Contents Example

1. Executive Summary
2. Introduction
  - 2.1. Purpose
  - 2.2. Center SMA Organizational Chart
  - 2.3. Planning Assumptions
3. Mission-Function-Process Descriptions
  - 3.1. Center Safety, Environmental, and Mission Assurance Vision
  - 3.2. Center SMA Charter
  - 3.3. Strategic Linkages
  - 3.4. Center SMA Functional Disciplines, Goals, and Performance
    - 3.4.1. Functional Group "A"
      - 3.4.1.1. FY06 Goals and Performance
      - 3.4.1.2. FY07 Goals and Metrics
    - 3.4.2. Functional Group "B"
      - 3.4.2.1. FY06 Goals and Performance
      - 3.4.2.2. FY07 Goals and Metrics
    - 3.4.3. Functional Group "C"
      - 3.4.3.1. FY06 Goals and Performance
      - 3.4.3.2. FY07 Goals and Metrics
    - 3.4.4. Other Functional Groups (if applicable)
4. Center Safety and Institutional Metrics
5. Customer Feedback
  - 5.1. Functional Group "A"
  - 5.2. Functional Group "B"
  - 5.3. Functional Group "C"
  - 5.4. Other Functional Groups (if applicable)
6. Critical Deliverables
7. Long-Term SMA Goals
8. FY07-FY12 Resource Plans
9. Issues

## Appendix C: AOA Guidelines

The following are questions and suggestions that should be considered when developing the AOA content. The current SMA Functional Leadership Plan and other Headquarters and Center policy and planning documents should also be reviewed.

### 1. Planning

- How do the SMA organization goals and objectives relate to NASA's, OSMA's, and the Center's strategic planning process?
- Are customers clearly identified by name?
- Are the process descriptions clearly stated?
- Do the budgets and human resource allocations make sense for a given process?
- Are metrics included? Are they achievable, useable metrics that contribute to continuous improvement?

### 2. Management

- Can the SMA organization manage in accordance with the AOA?
- Does the introduction provide sufficient information to make the AOA a stand-alone management document?
- Is the AOA consistent with, and integrated into, the Center's Implementation Plan?
- Is a functional organizational chart included? Are long-term goals included?
- Are the underlying assumptions stated?
- Are macro-metrics identified? (These are the top-level metrics used by the SMA Director to determine the health of the organization's processes.) Are the macro-metrics tracked by the Center SMA organization's management as a tool for process improvement?
- Are shortfalls and issues identified along with a plan for internally meeting the shortfalls and addressing the issues?
- Does the AOA reflect "new ways of doing business" (e.g., customer focus, value added, insight or oversight where appropriate, or other)?

### 3. Institutional Functions

- Is the Center's Operational Safety Program meeting the basic OSHA requirements to implement OSHA Standard 29 CFR 1960 with its current manpower and resources?
- Are "asterisked" items in the OSHA Standard 29 CFR 1960 Checklist (OSHA citables and "Notice of Violations") complied within identified processes?
- Based on your knowledge of the performance of the OSHA program at your Center, do you consider the processes and associated resources listed in the AOA to be adequate?

- Do the process descriptions and metrics address the Operational Safety Program (includes Emergency Preparedness, NASA Safety Reporting System, Fire Protection, Configuration Management, Facility Safety, Workplace and Laboratory Safety, Confined Space Entry, Pressure Systems, Lifting Devices, Explosive Safety, Safety Training and Awareness Programs, or others)?
- What are the overall metrics for the Operational Safety Program?
- Are Operational Safety linkages to the various NASA Programs and Projects at the Center identified? Are the AOAs coordinated with and concurred on by other Center organizations that actually perform the safety compliance functions?
- What evaluation process is in place to assess how well the Operational Safety Program is performing at the Center? What is the list of outstanding Operational Safety activities that may not be accomplished due to the limited resources?
- Are Aviation Safety management processes identified?
- Is the mishap reporting process defined? Are the reporting metrics appropriate?

## Appendix D: Processes/Activities Format

<b>SAFETY AND MISSION ASSURANCE ANNUAL OPERATING AGREEMENT</b>	
<b>CENTER:</b>	<b>OFFICE:</b>
<b>ACTIVITY DESCRIPTION:</b>	
<b>RISK OF DOING NOTHING:</b>	
<b>METRIC(S):</b>	<b>GOAL(S):</b>
<b>TASKS:</b>	<b>CUSTOMER(S):</b>

### Appendix E: Resource Allocations Format

0	1	2	3	4	5	6	7	8	9	10	11	12
PRIORITY	LINE ITEM NUMBER	ACTIVITY	WORK PROCESS	CUSTOMER	MINIMUM EFFECTIVE CS FTE	CUM. CS FTE	COST FOR CS SUPPORT	COST FOR NPS	OTHER CONTRACT COST	TOTAL CONTRACT COST (8+9)	TOTAL COST (7+10)	CUM. COST
1												
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3												
4												
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## **Appendix F: NASA Centers and Component Facilities to be Included in AOAs**

Ames Research Center

Dryden Flight Research Center

Goddard Space Flight Center

- Wallops Flight Facility

Jet Propulsion Laboratory/Pasadena, CA

- JPL Deep Space Network
  - Goldstone/Barstow, CA
  - Madrid, Spain
  - Canberra, Australia

Johnson Space Center

- White Sands Test Facility
- NASA Industrial Plant
  - Downey, CA
  - Palmdale, CA

Kennedy Space Center (KSC)

- KSC/Vandenberg Launch Facility, CA

Langley Research Center

Glenn Research Center

- Plum Brook Station, OH

Marshall Space Flight Center

- Michoud Assembly Facility, LA
- Santa Susana Field Laboratory, CA

Stennis Space Center

## **Appendix G: List of Safety and Risk Management Processes to be Included in AOs**

- Aviation Safety
- Emergency Preparedness
- Explosive Safety
- Exposure to Hazardous Chemicals/Materials
- Facilities Configuration Management
- Facility and Operational Safety:
- Fire Prevention/Protection
- Hazard Communications
- Lessons Learned Information
- Lifting Devices
- Mechanical Parts
- Metrology and Calibration
- Mishap Reporting and Investigating
- NASA Alert Reporting & GIDEP
- NASA Safety Reporting System
- NASA/OSHA Interface
- Non-Ionizing Radiation Protection
- Orbital Debris Minimization
- Pressure Vessel System Safety Exchange Program
- Problem Reporting and Corrective Action
- Quality Assurance
- Radiological Material Safety
- Range Safety (delegation to KSC)
- Reliability and Maintainability
- Risk Management/Assessment
- SMA Training
- Software (Assurance and V&V)
- System Safety
- Underwater Facility and
- Workplace and Laboratory Safety

## Appendix H: Risk Management Process Flow Chart

