

REVISION D



Coordinating OSMA Participation in the Space Shuttle CoFR Process

_____/s/
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Chief Safety and Mission Assurance

January 17, 2006
Date

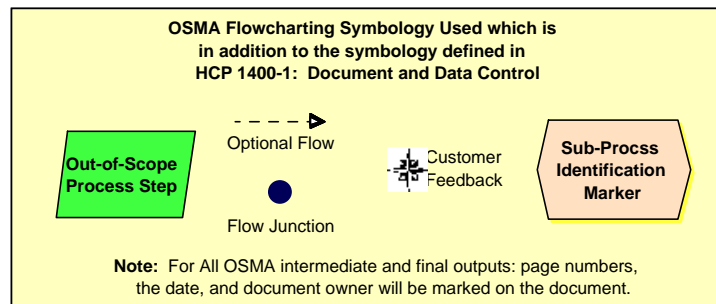
DOCUMENT HISTORY LOG

Status (Draft/ Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		January 13, 2000	
Revision	A	September 14, 2000	Editorial corrections to section 4 references, Section 5 Flowchart; step 6.04 and 3 rd Quality Record; and modified Step 6.08.
	B	February 1, 2002	Added customer list and customer feedback in Section 5 and step 6.12. Editorial correction to step 6.10. Added electronic record retention to Section 7.
	C	March 31, 2004	Editorial and organizational changes to all sections.
	D	January 17, 2006	Updated to new Organization Structure Deleted old steps: 6.09 and 6.11. Changed from PAR to SMARR. Updated steps 6.05, 6.07, 6.08 and 6.12, and associated Quality Records.

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Customers for this HOWI: Internal: Chief SMA, & AA for Space Operations
 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 the Safety and Mission Assurance participation in the Space Shuttle Certification of Flight Readiness (CoFR) Process. The OSMA plays a key role in the review of the Shuttle program's safety. This OSMA HOWI provides the flowchart and steps for the process and establishing the quality records associated with the task.

2. Scope and Applicability

This OSMA HOWI is applicable to the OSMA staff assigned to perform tasks within the OSMA Space Shuttle CoFR process in support of the Chief SMA responsibilities assigned in NSTS 08117 (Reference 4.3). This HOWI will assist in ensuring that the involved staff perform a quality assessment of the Shuttle mission assurance. The process is repeated for each Space Shuttle launch and mission.

3. Definitions

- 3.1. Chief SMA: Chief Safety and Mission Assurance
- 3.2. CoFR: Certification of Flight Readiness
- 3.3. FRR: Flight Readiness Review
- 3.4. NFSAM: Nuclear Flight Safety Assurance Manager
- 3.5. NLSA: Nuclear Launch Safety Approval
- 3.6. NSTS: National Space Transportation System
- 3.7. PMMT: Prelaunch Mission Management Team Review
- 3.8. SMARR: SMA Readiness Review
- 3.9. SSP: Space Shuttle Program
- 3.10. SSRP: System Safety Review Panel

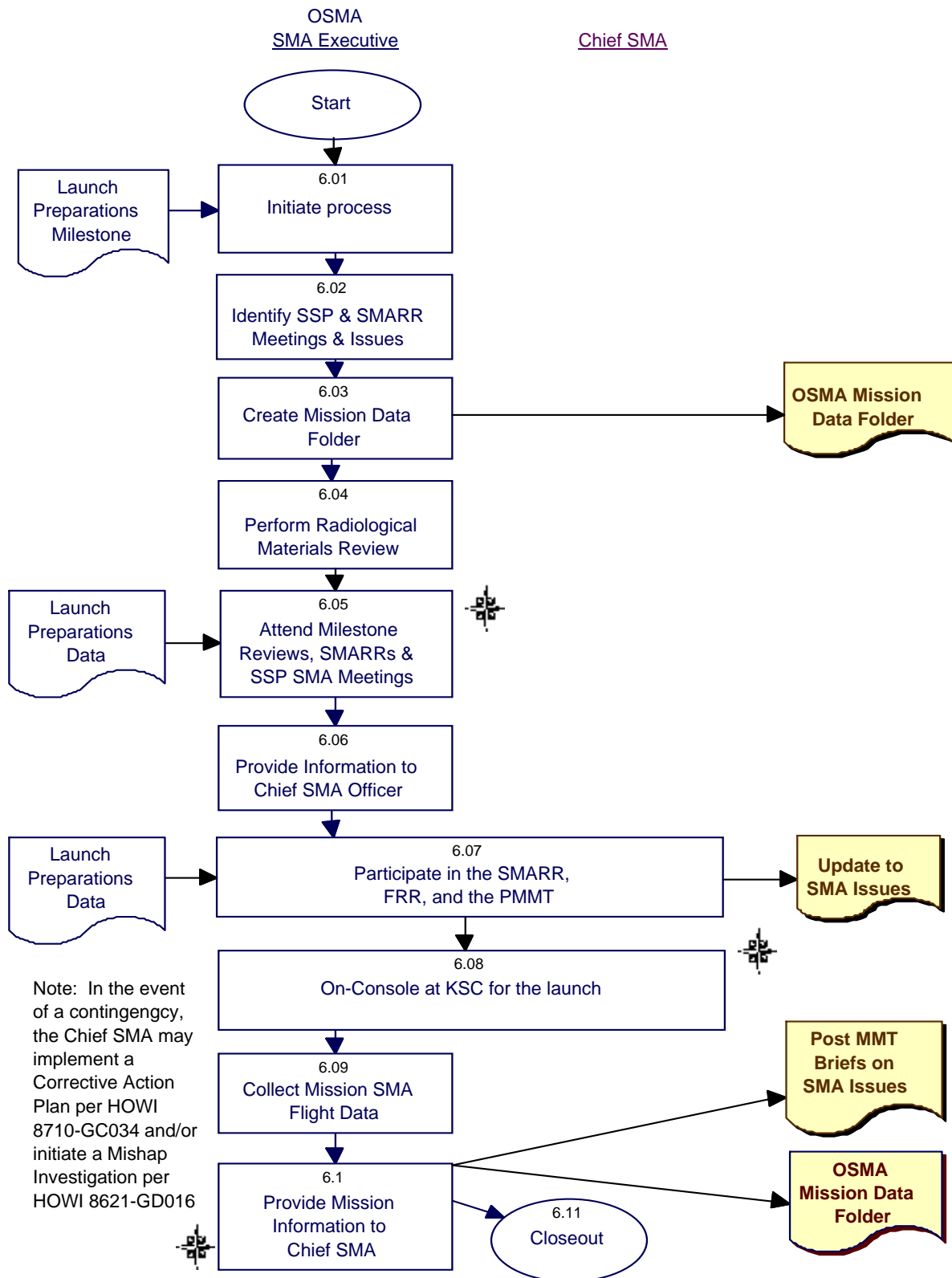
4. Reference Documents

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. [NPR 8715.3: NASA Safety Manual](#)

- 4.2. NSTS Directive No. 110E, *National Space Transportation System (NSTS) System Safety Review Panel (SSP) Charter*.
- 4.3. NSTS 08117, *Requirements and Procedures for the Certification of Flight Readiness*
Note: Change 58 added the requirement.
- 4.4. [Safety and Mission Assurance Agreement for the Space Flight Enterprise](#)
- 4.5. HOWI 8710-GA014, Coordinate Nuclear Launch Safety Approval (NLSA) Process

5. Flowchart



6. Procedure

6.01 Shuttle SMA Executive Initiate Process:

The Shuttle SMA Executive, as authorized in reference 4.1, identifies that a milestone review for a given mission is coming. References 4.2-4.5 define the role of OSMA in the CoFR process. The reviews nominally begin a few weeks prior to a scheduled launch.

6.02 Shuttle SMA Executive Identify SSP and SMARR Meetings and Issues:

The Shuttle SMA Executive reviews the available mission data and launch preparation schedules to identify SMA issues. Available data is obtained from the Shuttle program offices at Johnson Space Center, Kennedy Space Center, and Marshall Space Flight Center as well the NASA Headquarters Space Operations Mission Directorate. Open SMA issues identified on previous flights are also reviewed for inclusion. The Shuttle SMA Executive also attends the meetings for the SMA Readiness Reviews (SMARR) for a given mission. From this review, SMA issues are recorded.

6.03 Shuttle SMA Executive Create OSMA Mission Data Folder:

Prepare an OSMA Mission Data Folder to collect appropriate risk information for a given mission. The folder becomes the first step in generating the Quality Record for the mission.

6.04 Shuttle SMA Executive Perform Radiological Materials Review:

The Shuttle SMA Executive reviews the vehicle and payload data to determine if ANY radiological materials will be present at launch. If there are radiological materials planned, the OSMA Nuclear Flight Safety Assurance Manager (NFSAM) is contacted. HOWI 8710-Q014 is used in accordance with NPR 8715.3, Chapter 5. The Shuttle SMA Executive will remain in contact with the NFSAM to assist in the obtaining of Nuclear Launch Safety Approval (NLSA).

6.05 Shuttle SMA Executive Attend Milestone Reviews, SMARRs, and SSP SMA Meetings:

Attend the milestone reviews which have SMA impact:

1. External Tank/Solid Rocket Booster Mate Milestone Review
2. Orbiter Rollout Milestone Review
3. Pre-SMARR: Evaluate data presented regarding affect on the overall Space Shuttle risk posture
4. SMARR. The agenda is coordinated through OSMA participation in weekly pre-SMARR teleconferences.

Note: Other SMA meetings (e.g.; SMA Panel, Quality Panel) are also attended to gather pertinent information for the mission. Information presented during these meetings is available on the SSP website (<http://SSPweb.JSC.NASA.GOV/meeting>).

6.06 Shuttle SMA Executive Provide Information to Chief SMA Provide SMARR preparatory information to the Chief SMA

6.07 Shuttle SMA Executive with the Chief SMA Participate in the SMARR teleconference, the FRR, and the Prelaunch Mission Management Team (PMMT) Review:

The OSMA Shuttle SMA Executive participates (normally via teleconference) in the:

- SMARR and Tag-Up teleconferences.
- FRR at KSC in support of the Chief SMA.
- Prelaunch Mission Management Team teleconference.
- Attends the Shuttle FRR Board in an advisory capacity with the Chief SMA (the Chief SMA is a member of the Board), to attest to the readiness for flight in accordance with NSTS 08117.

The Shuttle SMA Executive also participates with the Chief SMA to provide real-time assessment of information to the Chief SMA, as required.

<p>NOTE: In the event of a contingency, the Chief SMA may implement a Corrective Action plan per HOWI 8710-GC034 and/or initiate a mishap investigation per HOWI 8621-GD016.</p>
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6.08 Shuttle SMA Executive On-Console at KSC for the Launch

The Shuttle SMA Executive or his designee participates in the launch preparations at KSC in the back-up firing room in accordance with NPR 8715.3, fulfilling the role of Headquarters Safety for the launch. The Shuttle SMA Executive reviews the SMA data for the mission and intervenes by exception during the Launch Director's final call for Go for Launch.

6.09 Shuttle SMA Executive Provide Mission Information to Chief SMA:

The Shuttle SMA Executive participates in on-orbit MMT meetings and provides the Chief SMA with mission status and summarizes SMA concerns and issues throughout the mission. The MMT status reports are filed as a Quality Record in the electronic OSMA Mission Data Folder.

6.10 Shuttle SMA Executive Closeout:

The Shuttle SMA Executive ensures that all Quality Records are filed and then closes out the process.

7. Quality Records

Record ID	Owner	Location	Media Electronic /hardcopy	Schedule Number & Item Number	Retention & Disposition
OSMA Mission Data Folder	Shuttle SMA Executive	MSD files	Electronic & Hardcopy	Schedule: 1 Item: 1.120.E	Keep until no longer has reference value then destroy when 15 years old
MMT Status Report	Shuttle SMA Executive	MSD files	Electronic & Hardcopy	Schedule: 1 Item: 1.120.E	Keep until no longer has reference value then destroy when 15 years old

**** Note:** When Post Mission SMA Issues are filed, duplicates from other Quality Records may be destroyed and files combined **

OSMA electronic storage site: U:\q groups\code qe\Shuttle Mission Data