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John C. Stennis Space Center
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COMPLIANCE IS MANDATORY

John C. Stennis Space Center
Material Review Board Procedural Requirements

Document History Log

Status/Change/ Revision	Change Date	Originator/Phone	Description
Basic	6/6/09	M. Rewis x 8-2663	Initial Release.
A	9/2010	T. White x 8-2390	Updated Center Director's signature block; Added Center Operations as Member to Table 2.1. Updated response timeline in Sections 2.3.3.i, l, and m. Changed DCMA to Quality Support Contractor in Appendix C. General admin changes.
A-1	12/13/2011	Ralph Gonzalez 228-688-2101	Table 2.1: Deleted HATC references.

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TABLES

PREFACE

P.1 PURPOSE

This document is the procedural requirement for the NASA SSC Material Review Board, (MRB). This document does not supersede contractor MRB processes.

P.2 APPLICABILITY

a. This SPR is applicable to Stennis Space Center and all NASA/SSC personnel.

b. This SPR is applicable to Stennis Space Center (SSC) contractors, grant recipients, resident agencies, or other contractors to the extent specified in their respective contracts, grants, or agreements.

c. This Stennis Procedural Requirement is applicable to all products that are designed, fabricated, manufactured, processed, tested or installed at SSC under control of NASA and their respective contractors.

P.3 AUTHORITY

a. NPD 8700.1, NASA Policy for Safety and Mission Success.

b. NPD 8730.5, NASA Quality Assurance Program Policy.

P.4 APPLICABLE DOCUMENTS

All citations are assumed to be the latest version unless otherwise specified.

a. SOI-8040-0001-FACENG, Construction Configuration Management.

b. SOI-8080-0008, Documentation and Configuration Control of Test Critical Software.

c. SOI-8080-0015, Configuration Control of Propulsion Test Systems.

d. SPR 1440.1, SSC Records Management Program Requirements.

e. SPR 8730.1, Control of Nonconforming Product.

f. SSTD-8070-0007-CONFIG, Variance, & Alternate Standard Requests.

g. SSTD-8070-0008-CONFIG, Discrepancy and Correction Report.

h. SCWI-8710-0001, System Safety and Health.

P.5 MEASUREMENT/VERIFICATION

Compliance with this procedure will be monitored through the Stennis Space Center Management System (SMS) and Office of Safety and Mission Assurance (SMA) by objective evidence, including NASA and contractor work authorizing documents, nonconformance documents and variances.

P.6 CANCELLATION

None

Signature on file

Patrick E. Scheuermann
Director

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CHAPTER 1. ROLES AND RESPONSIBILITIES

1.1 NASA SSC Office of Safety and Mission Assurance Representative

The SSC Office of Safety and Mission Assurance Representative is responsible for:

a. Acting as Chair and voting member of the NASA MRB, with signature authority for Board dispositions.

b. Approving/disapproving NASA Material Review Board (MRB) membership.

c. Assuring that clearly defined processes and procedures are in effect to ensure that nonconformances are properly documented and dispositioned.

d. Appointing NASA MRB Secretary.

e. Submitting information to external boards (Configuration Control Boards (CCB), Facility Review Boards (FRB)), when necessary.

1.2 NASA/SSC Chief Engineer

The SSC Chief Engineer is responsible for:

a. Acting as voting member of the NASA MRB, with signature authority for Board dispositions.

b. Assuring that clearly defined processes and procedures are in effect to ensure that nonconformances are properly documented and dispositioned.

c. Maintain the Engineering and Test Directorate (E&TD) Engineering Order Approvers List for approved alternates.

1.3 Contractor Material Review Board Chairman

The Contractor MRB Chairman is responsible for:

a. Evaluating nonconformances at the contractor MRB level for submittal to the NASA MRB.

b. Acting as a voting member of the NASA MRB, with signature authority for Board dispositions pertinent to their scope of operations.

c. Assuring that sufficient descriptive information accompanies the nonconformance when it is elevated to the NASA MRB.

1.4 NASA Quality Representative to Contractor Material Review Board (MRB)

The NASA Quality Representative is responsible for evaluating nonconformances at the contractor MRB for submittal to the NASA SSC MRB.

1.5 Contractor Safety and Quality Assurance Manager

Contractor Safety and Quality Assurance Managers are responsible for:

a. Implementing internal procedures for controlling nonconformances in accordance with SPR 8730.1, Control of Nonconforming Product.

b. Generating, maintaining, and submitting the master list of contractor members of the NASA MRB, and ensuring that a copy of the authorized personnel list is provided to the NASA MRB Chair.

c. Developing and maintaining records for the control of nonconforming product in accordance with SPR 1440.1, Records Management Program Requirements, and internal procedures.

1.6 NASA Material Review Board Secretary

The NASA MRB Secretary is responsible for:

a. Acting as the secretary to the NASA MRB.

b. Developing, maintaining, and/or retaining all records pertinent to the MRB process, inclusive of meeting minutes, subject nonconformances, and tracking reference numbers thereof, and log of MRB items. MRB records will be maintained per SPR 1440.1, SSC Records Management Program Requirements.

1.7 NASA Engineering and Safety Center (NESC) Representative

The NESC Representative is responsible for:

a. Acting as a non-voting member of the NASA MRB.

b. Acting as an interface point between NASA SSC and NESC.

1.8 Other Material Review Board Members (Voting and Non-voting)

Other MRB Members both voting and non-voting are responsible for:

a. Being prepared to discuss and debate the subject nonconformances.

b. Being prepared to cast vote, yes or no, and providing rationale why such a vote is cast if a voting member.

1.9 Presenters/Advisors

Presenters/Advisors are responsible for being prepared to discuss the subject nonconformance in advance of board meetings nonconformance. Presentation material should include items such as, but not limited to, proposed disposition(s), applicable drawing(s), background information, etc.

CHAPTER 2. NASA SSC MATERIAL REVIEW BOARD PROCEDURE

2.1 Relevancy

This SPR applies to all the functional and physical aspects of the NASA Facilities, Test Stands, and Test Support Systems. The MRB is involved in the processing and the ultimate disposition of select nonconformances - Discrepancy and Correction Reports (D&CRs)/Discrepancy Reports (DR) for facility systems, ground support, and/or critical hardware where acceptance of a nonconformance for continued use is required, and as deemed appropriate by section 2.2, below.

Within the purview of the NASA MRB are nonconformances of sufficient criticality to warrant board intervention, nonconformances where contractual responsibility is in question, and/or nonconformances where trend analysis application has revealed a global SSC issue, thus warranting a global approach to remediation.

2.2 Specific Scope of Responsibility

a. Per SPR 8730.1, Control of Nonconforming Product and SSTD-8070-0008-CONFIG, Discrepancy and Correction Report, when a material defect is noted on a contractor nonconformance document (D&CR, DR, etc.) by a contractor MRB, the Chair of the respective contractor MRB, and the NASA Quality member of the contractor MRB shall assess whether a NASA MRB review is appropriate. (In the event of disagreement, the nonconformance will be elevated to the NASA MRB.)

b. The following criteria shall be utilized in determining those items requiring NASA MRB authority and thus convening of the board:

(1) Risk Assessment Code (RAC): The nonconformance shall be evaluated per the RAC matrix in SCWI-8710-0001, System Safety and Health. Per the matrix all "red" items (risk scores, or the product of likelihood and consequence, greater than or equal to "15") shall be upgraded to the NASA MRB.

(2) Site Wide Impacts: Nonconformances that require MRB concurrence and rationale from more than one contractor shall be submitted to the NASA MRB. Additionally, nonconformances that have a site wide impact, but are managed by one contract shall also be brought to the NASA MRB.

(3) High visibility nonconformance, significant cost or schedule impact, NASA MRB request or if the contractor MRB is unable to reach consensus on a disposition.

2.3 NASA Material Review Board Tracking and Disposition

2.3.1 NASA Material Review Board Tracking

a. The board (as represented by Table 2.1) shall be presented with the select nonconformance as evaluated by the contractor MRB meeting the aforementioned criteria, and appropriately stamped "NASA MRB."

b. The nonconformance description shall present such detail as to thoroughly chronicle the problem. As a minimum that detail will provide:

(1) A statement describing the actual discrepancy in detail. Specific dimensions should be provided to the extent that the reader need not look at the print or specification to understand the discrepancy. Sketches should be used as necessary for clarification.

(2) A statement explaining at what point in the process the nonconformance was discovered; for example, "during ambient low-pressure forward leak test, the seal was found to leak."

(3) An annotation of any applicable drawing or specification. Drawing number, zone, and view, should be included as appropriate, to locate the discrepant item. In case a specification is referenced, the applicable page and paragraph should be annotated.

c. From these nonconformances, the secretariat shall create a reference number to log and track the MRB action.

2.3.2 NASA Material Review Board Disposition

The disposition for a material discrepancy shall be one of the following, and shall include detailed work steps, inspections and tests to be performed.

a. Repair: Action on a nonconforming product to make it acceptable for the intended use, although it does not meet the original specified requirements. Repair includes returning to a vendor for continuation or completion of specified requirements. The purpose of the repair is to reduce the effect of the nonconformance. Repair is distinguished from rework in that the product after repair still does not entirely conform to the applicable drawing, specification or other technical requirement. Note: Standard Repair Procedures, which require approval by the MRB prior to initial use, can be used without further MRB action.

b. Scrap: A nonconforming product that is not usable for its intended purpose and which cannot be economically reworked or cannot be repaired in an acceptable manner.

c. Use As Is: A nonconforming product which, in its present state, is considered capable of performing its original design function without limitations.

d. Restricted Use: Authorizes restricted, limited or temporary use of a nonconforming product in its current state due to time, financial or test constraints, further engineering evaluation, or unavailability of replacement hardware.

e. Repair – Restricted Use: Authorizes restricted, limited or temporary use of a nonconforming product after repair due to time, financial or test constraints, further engineering evaluation, or unavailability of replacement hardware.

2.3.3 Additional Board Action

The following shall be accomplished to complete the nonconformance review:

a. The MRB shall review the nonconformance description and disposition it.

b. If acceptable, each member vested with signature authority shall sign the disposition to the nonconformance. Those with signature authority include the NASA MRB chair, the NASA E&TD Chief Engineer, and the responsible Contractor MRB Chair.

c. If a lack of clear consensus exists, a vote shall be taken per Section 2.3.3.o. With NASA MRB approval, the corrective action may be initiated on the nonconformance.

d. Supplemental information such as an engineering rationale for the disposition shall be provided.

e. The rationale shall show clearly, for example, why design characteristics are not diminished or why a part is scrapped.

f. Supplemental information shall be attached to the nonconformance. The NASA MRB will go to lengths to discern both the root cause and needed corrective action for amelioration of the nonconformance and issues thereof.

g. When contractor MRB/contractor actions are necessitated, the nonconformance shall be returned to the originating contractor MRB for review and execution of corrective actions.

h. The contractor MRB shall provide a timely status to the NASA MRB of resultant corrective actions.

i. The response shall be commensurate with the criticality of the nonconformance and corrective action, not to exceed 90 days, unless otherwise directed by the NASA MRB.

j. If NASA actions are necessitated, the NASA MRB Chair shall assign an office of primary responsibility (OPR) for completion of the corrective actions.

k. The OPR shall provide a timely corrective action status to the NASA MRB of the resultant corrective actions.

l. The response shall be commensurate with the criticality of the nonconformance and corrective action, not to exceed 90 days, unless otherwise directed by the NASA MRB.

m. Should the nonconformance be sufficiently systemic or recurrent to warrant, it shall be tracked by the NASA Corrective Action Request (CAR) System maintained by the SMA support contractor.

n. The NASA MRB shall be composed of the personnel as seen in Table 2.1.

o. The NASA MRB shall be organized such that if an inability to come to a consensus arises on boarded nonconformances, a vote will be taken.

1. All votes of voting members shall be equally weighted.
2. Non-voting members are free to voice concerns, but will not play a role in final vote.

p. NASA MRB associated documentation, inclusive of a complete copy or the nonconformance shall be maintained concurrently in hard copy fashion and electronically by the board secretariat, as NASA MRB records.

2.3.4 Urgent Material Review Board Reviews

The following describes the process for urgent reviews to be conducted.

a. An urgent priority shall be assigned to the review of nonconformances where immediate authorization to proceed is required.

b. A change shall be considered urgent when either of the following conditions exist:

(1) Failure to immediately change operational baselines would result in hazardous/unsafe conditions or stoppage of an in-process test operation.

(2) Where normal processing would substantially impact cost, schedule, and/or contractual obligations.

c. Should hasty convening of the NASA MRB be dictated, the Chair shall make the appropriate notifications such that all the members, or their designees, can report as quickly as possible.

d. In accordance with Chapter 3, should baseline change to configuration be warranted to ameliorate the above conditions, an engineering change request, or facility change request shall be prepared and directly coordinated with the Configuration Control Board (CCB) or Facility Review Board (FRB).

e. If a variance is needed the board shall prepare a disposition for a variance request and submit it to the appropriate contractor MRB for processing.

Table 2.1 Material Review Board Membership

SMA Quality Lead, or designee	Chair	Signature Authority
E&TD Chief Engineer, or designee	Member	Signature Authority
MRB Secretary	Secretariat	
TOC Engineering Representative TOC Safety Representative TOC MRB Chair	Non-voting participant Non-voting participant Member	 Signature Authority
FOSC Engineering Representative FOSC Safety Representative FOSC MRB Chair	Non-voting participant Non-voting participant Member	 Signature Authority
LSC Technical Representative	Member	
SSC NESC Representative	Non-voting participant	
NASA Center Operations	Member	
NASA Procurement and NASA Project Directorate will be added on an as needed basis.		

CHAPTER 3. KEY CENTER PROCESS INTERFACE

3.1 Interface with Configuration Control Board (CCB), Facility Review Board (FRB)/Change Request

a. Should NASA MRB action involve potential center configuration change, the board shall comply with:

- SOI-8040-0001-FACENG, Construction Configuration Management.
- SOI-8080-0015, Configuration Control of Propulsion Test Systems.
- SOI-8080-0008, Documentation and Configuration Control of Test Critical Software.

b. In such an event, the NASA MRB shall prepare a disposition for the applicable contractor MRB to gather all pertinent board documentation. Dependent on the particular board, the respective technical authority will document the change on form:

- SSC-650, Engineering Change Request (ECR, for critical systems and software)
- SSC-61, Field Change Request (FCR)

c. The applicable contractor MRB shall then submit all associated information to the appropriate CCB/FRB chair.

d. The loop shall be closed with the CCB/FRB chair submitting the appropriately dispositioned ECR/FCR, and the original nonconformance with disposition back to the NASA MRB for recordkeeping.

3.2 Interface with Configuration Control Board (CCB) / Variance Process

a. If during the course of NASA MRB deliberation, it becomes apparent that variance to NASA, and/or SSC policy, procedure, and/or standards is recommended the NASA MRB shall prepare a disposition for the applicable contractor MRB to gather all pertinent board documentation.

b. The respective technical authority shall document the variance on Form SSC-517, Variance Request, and transmit the information in its entirety to the CCB chair for dispositioning per SSTD-8070-0007-CONFIG, Variance and Alternate Standard Requests.

c. The loop shall be closed with the CCB chair submitting dispositioned Form 517, and the original nonconformance document with appropriate disposition for NASA MRB recordkeeping.

3.3 Lessons Learned

a. If during the course of NASA MRB deliberation, it is clear that the information gleaned from board process is of sufficient value to warrant inclusion into the NASA Lessons Learned Information System (LLIS), the board chair shall transmit such information to the LLIS Center Data Manager (CDM) for dispositioning.

b. The CDM shall provide back to the board closure/rationale for inclusion/non-inclusion in the LLIS.

CHAPTER 4. CONTROL OF RECORDS

The following minimum records and/or forms shall be generated and/or maintained in accordance with this procedure and shall meet the requirements of NPR 1441.1, NASA Records Retention Schedules and SPR 1440.1, SSC Records Management Program Requirements. Records may be either electronic or hardcopy versions.

a. Records

(1) Discrepancy and Correction Reports/Discrepancy Reports
(2) MRB review materials
(3) MRB Log
(4) MRB Meeting Minutes
(5) Letters of MRB Appointments

b. Forms

(1) SSC-339, Discrepancy and Correction Reports (D&CRs)
(2) SSC-723, Discrepancy Reports (DR)
(3) SSC-650, Engineering Change Request (ECR, for critical systems and software)
(4) SSC-61, Field Change Request (FCR)
(5) Form SSC-517, Variance Request

APPENDIX A. DEFINITIONS

Configuration Control Board (CCB) – Establishes and maintains baselines for E&TD systems and supporting hardware, software and firmware Configuration items which are critical to the accomplishment of mission objectives. The CCB is also responsible for approval of Engineering Change Requests (ECRs) and disposition of all facility projects, new facilities and major additions or modifications of property related facilities and systems.

Critical Propulsion Test Systems – Those systems determined, by Engineering Division and Operations Division, to be essential to assure mission success, prevent damage to government property, and to prevent injury or loss of life.

Facility Review Board (FRB) - A facility review function whose members are appointed by the SSC Center Director to review facility programs as defined in SBCC-1150-0002, Facility Review Board Charter

Material Review Board - A board established to oversee dispositions of material nonconformances that cannot be corrected through standard repair or rework procedures.

Nonconformance - A condition of any article or material in which one or more characteristics do not conform to requirements. This includes failures, discrepancies, defects, and malfunctions.

Work Authorization Document (WAD) - Any of the approved documentation that allows tasks to be performed. This includes Test Preparation Sheets (TPS), Engineering Work Request (EWR), Process Plans; Discrepancy Reports (DRs) and Facility Squawks.

APPENDIX B. ACRONYMS AND ABBREVIATIONS

CAR Corrective Action Request
CCB Configuration Control Board
CDM Center Data Manager
D&CR Discrepancy and Correction Report
DR Discrepancy Report
E&TD Engineering and Test Directorate
ECR Engineering Change Request
EWR Engineering Work Request
FCR Field Change Request
FOSC Facility Operating Services Contract
FRB Facility Review Board
LLIS Lessons Learned Information System
LSC Laboratory Services Contract
MRB Material Review Board
NESC NASA Engineering and Safety Center
OPR Office of Primary Responsibility
PWR Pratt & Whitney Rocketdyne
RAC Risk Assessment Code
SMA Office of Safety and Mission Assurance
SOI Stennis Organizational Instruction
SPR Stennis Procedural Requirements
SMS Stennis Management System
SSC Stennis Space Center
TOC Test Operations Contractor
TPS Test Preparation Sheet
WAD Work Authorization Document

APPENDIX C. NASA MRB PROCESS FLOW