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Space Administration

John C. Stennis Space Center
Stennis Space Center, MS39529-6000

SPR 8730.5 Rev C
March 2021

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	06/06/09	M. Rewis x 8-2663	Initial Release.
A	09/2010	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 x 8-2101	Table 2.1: Deleted HATC references.
B	10/23/2015	Christina Zeringue x 8-3169	Updated Applicable Documents to include SCWI-8715-0010 Process Safety Management Program, and corrected document titles. Updated Section 1.1 to specify the SMA representative as the Chief Safety Officer. Added Section 1.3, 1.4, and 1.5 to include Center Operations, E&TD, and SMA Division Chiefs as Members. Changed Contractor MRB Chair from Member to Participant in Section 1.6. Clarified Paragraph 1.6.d for Standard Repair Procedures. Updated Section 1.8 to include E&TD Deputy Chief Engineer on Contractor MRB dispositions. Added Section 1.9 for Test Article Customer Representative. Re-ordered line items and made minor wording changes in Sections 1.10-1.12 for clarity. Replaced "Discrepancy Report" with "Problem Report" throughout document. Added Paragraph 2.2.b.3 for test article impact. Updated Section 2.3.3 to include additional details on MRB process, and re-ordered line items for clarity. Updated Table 2.1 MRB Membership. Updated Sections 3.1 and 3.2 to delete reference to FRB, and

			unnecessary detail from referenced SOIs and SSTD. Added Sections 3.3 and 3.4 to include actions pertaining to PSM and Systems Safety processes. Deleted reference to Discrepancy report in Chapter 4, Forms list. Updated Appendix A for CCB definitions and deletion of FRB. Updated Appendix B, acronym list. Updated Appendix C, MRB process flow.
C	March 2021	Christina Zeringue x 8-3169	Five year review. Updated applicable documents and position title in Section 1.3. Removed all language associated with obsolete Discrepancy and Correction Report (D&CR). Changed Field Change Request to Stennis Change Request.

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TABLES

PREFACE

P.1 PURPOSE

This document of the National Aeronautics and Space Administration (NASA) John C. Stennis Space Center (SSC) defines the procedural requirements of the SSC Material Review Board (MRB). This document does not supersede contractor MRB processes but does establish requirements to integrate the contractor MRB process into the NASA MRB process.

P.2 APPLICABILITY

a. This Stennis Procedural Requirement (SPR) is applicable to SSC and all NASA SSC personnel.

b. This SPR is applicable to SSC contractors, resident agencies, or other contractors to the extent specified in their respective contracts, grants, or agreements.

c. This SPR is applicable to all products that are designed, fabricated, manufactured, processed, tested, or installed at SSC under control of NASA and their respective contractors, including all NASA Facilities, Test Stands, Test Support Systems, and Range Safety Systems.

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. SPR 1440.1, SSC Records Management Program Requirements.

b. SPR 8730.1, Control of Nonconforming Product.

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

d. SOI-8080-0008, Documentation and Configuration Control of Test Complex Software.

e. SOI-8080-0015, Configuration Control of Technical Systems.

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

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

h. SCWI-8715-0010, Process Safety Management Program.

i. SWI-8730-0006, SSC Institutional Nonconformance Processing.

P.5 MEASUREMENT/VERIFICATION

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

P.6 CANCELLATION

SPR 8730.5 Rev B dated January 2016.

RICHARD GILBRECH
Digitally signed by RICHARD GILBRECH
Date: 2021.03.03 11:10:24 -06'00'

Richard J. Gilbrech, Ph.D.
Director

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CHAPTER 1. ROLES AND RESPONSIBILITIES

1.1 NASA SSC Safety and Mission Assurance Directorate (SMA) Chief Safety Officer

The SSC Chief Safety Officer, or designee, is responsible for:

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

b. Maintaining the list of NASA MRB membership.

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

d. Appointing a NASA MRB Secretary.

e. Submitting information to external processes and boards when necessary, such as Management of Change (MOC), System Hazard Analysis review, Technical Authority Boards, Configuration Control Boards (CCB), and Stennis Control Board (SCB).

1.2 NASA SSC Chief Engineer

The SSC Chief Engineer, or designee, is responsible for: Acting as Member of the NASA MRB, with signature authority for Board dispositions.

1.3 NASA SSC Center Operations Directorate (COD) Facilities Engineering - Test Complex Support Branch Division Chief

The SSC COD Facilities Engineering - Test Complex Support Branch Division Chief or designee is responsible for: Acting as Member of the NASA MRB, with signature authority for Board dispositions.

1.4 NASA SSC Engineering and Test Directorate (E&TD), Engineering Division Chief

The SSC E&TD, Engineering Division Chief or designee, is responsible for: Acting as Member of the NASA MRB with signature authority for Board dispositions.

1.5 NASA SSC SMA Division Chief

The SSC SMA Division Chief or designee is responsible for: Acting as Member of the NASA MRB with signature authority for Board dispositions.

1.6 Contractor Material Review Board Chair

The Contractor MRB Chairs are responsible for:

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

b. Acting as a Participant of the NASA MRB.

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

d. Submitting approved Standard Repair Procedures (SRP) and the authorizing Contractor MRB to NASA SMA.

1.7 Contractor Safety and Mission Assurance Manager

Contractor SMA 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 and Contractor MRB meeting minutes and dispositions in accordance with SPR 1440.1, Records Management Program Requirements and contractor internal procedures.

1.8 NASA Representatives to Contractor Material Review Board (MRB)

a. All Contractor MRBs should be supported by appropriate personnel from NASA E&TD, NASA COD, and NASA SMA.

b. NASA Deputy Chief Engineer or designee concurrence shall be required on all Contractor MRB dispositions prior to implementation.

c. NASA SMA concurrence shall be required on all Contractor MRB dispositions prior to implementation. Only authorized NASA SMA personnel are permitted to concur with MRB dispositions.

d. The NASA SMA Representative is responsible for evaluating nonconformances at the Contractor MRB for submittal to the NASA SSC MRB.

1.9 Test Article Customer Representative

Test Article Customer Representative is responsible for:

a. Acting as a Participant of the NASA MRB, with concurrence authority for Board dispositions when the MRB decision may directly impact test article systems and requirements, test objectives, or the safety of their personnel.

b. Generating, maintaining, and submitting the master list of designated representatives to the NASA MRB and ensuring that a copy of the appropriate personnel list is provided to the NASA MRB Chair.

c. Acting as an interface point between NASA SSC and the Test Article Customer organization for informational purposes as a participant in other NASA MRBs, when requested by the NASA MRB Chair.

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

1.11 NASA Engineering and Safety Center (NESC) Representative

The NESC Representative is responsible for:

a. Acting as a Participant of the NASA MRB.

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

1.12 Other Material Review Board Participants

Other MRB Participants including Subject Matter Experts (i.e. Gas & Materials Science Lab representative, Materials and Processes Control Team, Lifting Device and Equipment Manager,

Pressure System Manager, Office of the Chief Financial Officer representative) are responsible for being prepared to discuss and debate the subject nonconformances and dispositions.

1.13 Presenters

Presenters are responsible for being prepared to present the pertinent information to the Board and to discuss the subject nonconformances and dispositions. Presentation material should include items such as, but not limited to the following:

a. Nonconformance background information

b. Proposed disposition

c. Applicable drawings or specifications

d. Any other relevant technical or programmatic information to assist the Board in evaluating the disposition

CHAPTER 2. NASA SSC MATERIAL REVIEW BOARD PROCEDURE

2.1 Relevancy

The MRB is involved in the processing and the ultimate disposition of select nonconformances, i.e., Problem Reports (PR) for facility systems, ground support, 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, or nonconformances where trend analysis 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, when a material defect is noted on a contractor nonconformance document (PR, etc.), the Chair of the respective contractor MRB, and the NASA SMA Representative of the Contractor MRB shall assess whether a NASA MRB review is appropriate. In the event of disagreement, the nonconformance shall 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, customer, or tenant, 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) Test Article Impact: Nonconformances which have an impact to the test article systems and requirements, test objectives, or personnel safety.

   (4) High visibility nonconformance, significant cost or schedule impact.

   (5) 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 Request

a. In order to convene a MRB, the presenter shall submit the nonconformance description information to the MRB Chair.

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. If a specification is referenced, the applicable page and paragraph should be annotated.

c. From these nonconformances, the MRB Secretary shall create a reference number to log and track the MRB action and notify the required MRB Members and Participants.

2.3.2 NASA Material Review Board Disposition Types

The disposition for a material discrepancy shall be one (1) 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 continue to be used without further MRB action. The approved SRP shall reference the authorizing MRB and shall be archived by NASA SMA for future use.

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 NASA Material Review Board Process

The following shall be accomplished to complete the nonconformance review and disposition approval:

a. The presenter should coordinate with the MRB Chair to prepare documentation, proposed disposition and rationale for the MRB Members' review, in the format and level of detail required to complete the review.

b. The rationale shall show clearly, for example, why design and safety characteristics are not diminished to an unacceptable risk level, or why a part is recommended to be scrapped.

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

d. The MRB shall convene to review the nonconformance description, proposed disposition and rationale. The MRB shall be composed of the personnel as listed in Table 2.1.

e. At the conclusion of the discussion, the MRB Members will be polled for approval or disapproval.

f. If approved, each Member vested with signature or concurrence authority shall sign the disposition to the nonconformance. Those with signature authority include the Chief Safety Officer, Chief Engineer, E&TD Engineering Division Chief, COD Project Management Division Chief, SMA Division Chief, and the Test Article Representative when required for concurrence.

g. If a unanimous decision does not exist, the MRB Chair shall have the final authority to approve or disapprove the disposition. Any Member or Participant may elevate Formal Dissents through the SMA Technical Authority for resolution.

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

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

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

m. NASA MRB associated documentation, inclusive of a complete copy of the nonconformance, shall be maintained in accordance with SPR 1440.1, as NASA MRB records.

2.3.4 Urgent Material Review Board Process

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 three (3), should baseline change to configuration be warranted to ameliorate the above conditions, an urgent Engineering Change Request (ECR) or Stennis Change Request (SCR) shall be prepared and directly coordinated with the appropriate CCB.

f. If an urgent variance is needed, the Board shall prepare a disposition for a variance request and submit it to the appropriate CCB for processing.

Table 2.1 Material Review Board Membership

Chief Safety Officer or designee	Chair	Signature Authority
Chief Engineer or designee	Member	Signature Authority
MRB Secretary	Secretariat	
Center Operations Directorate Facilities Engineering - Test Complex Support Branch Division Chief or designee	Member	Signature Authority
E&TD Engineering Division Chief or designee	Member	Signature Authority
SMA Division Chief or designee	Member	Signature Authority
Contractor MRB Chair(s) Contractor Engineering Representative(s) Contractor Safety Representative(s)	Participant Participant Participant	
NASA RPT Level 3 Representative	Participant	
NASA Office of Procurement Representative (SSC/MAF Contracting Officer's Representatives)	Participant, as needed	
NASA Project Management Division Representative	Participant	
Test Article Representative	Participant, as needed	Concurrence
Test Director, E&TD	Participant	
Operations Manager, COD	Participant	
NESC Representative	Participant	

CHAPTER 3. KEY CENTER PROCESS INTERFACE

3.1 Interface with External Processes and Boards

a. Should NASA MRB action involve Center configuration change, the Board shall comply with:

(1) SOI-8040-0001-FACENG, Construction Configuration Management

(2) SOI-8080-0015, Configuration Control of Propulsion Test Systems

(3) SOI-8080-0008, Documentation and Configuration Control of Test Critical Software

b. In such an event, the NASA MRB shall track an action for the responsible organization to gather all pertinent Board documentation for submittal and approval at the appropriate CCB.

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

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 track an action for the responsible organization to submit the variance for approval in accordance with SSTD-8070-0007-CONFIG, Variance and Alternate Standard Requests.

3.3 Interface with Process Safety Management

If the disposition implements modifications to equipment, procedures, materials and processing conditions, the NASA MRB shall track an action for the responsible organization to process a Management of Change in accordance with SCWI-8715-0010, Process Safety Management Program.

3.4 Interface with System Safety and Health

If the disposition implements major process and/or procedural changes, the potential hazards and risk of the changes shall be assessed to determine if an update to the hazard analyses should be accomplished. If warranted, the NASA MRB shall track an action for the responsible organization to complete the required update in accordance with SCWI-8710-0001, System Safety and Health.

3.5 Lessons Learned

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.

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 and forms may be either electronic or hardcopy versions.

a. Records:

(1) PRs
(2) MRB review materials
(3) MRB Log
(4) MRB Meeting Minutes
(5) Letters of MRB Appointments

b. Forms:

(1) Engineering Change Request (for propulsion test systems and software)
(2) Stennis Change Request (SCR)
(3) Form SSC-517, Variance Request

APPENDIX A. DEFINITIONS

COD Configuration Control Board (CCB) – Approve technical changes affecting construction projects at SSC.

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.

E&TD 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 ECRs and disposition of all facility projects, new facilities and major additions, or modifications of property related facilities and systems.

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 (1) 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), Process Plans, and PRs.

APPENDIX B. ACRONYMS AND ABBREVIATIONS

CAR	Corrective Action Request
CCB	Configuration Control Board
CDM	Center Data Manager
COD	Center Operations Directorate
E&TD	Engineering and Test Directorate
ECR	Engineering Change Request
EWR	Engineering Work Request
LLIS	Lessons Learned Information System
MOC	Management of Change
MRB	Material Review Board
NASA	National Aeronautics and Space Administration
NESC	NASA Engineering and Safety Center
NPD	NASA Policy Directive
NODIS	NASA Online Directive Information System
OPR	Office of Primary Responsibility
PR	Problem Report
RAC	Risk Assessment Code
SCB	Stennis Control Board
SCR	Stennis Change Request
SCWI	Stennis Common Work Instruction
SMA	Safety and Mission Assurance Directorate
SOI	Stennis Organizational Instruction
SPR	Stennis Procedural Requirements
SMS	Stennis Management System
SRP	Standard Repair Procedures
SSC	John C. Stennis Space Center
TPS	Test Preparation Sheet
WAD	Work Authorization Document

APPENDIX C. NASA MRB PROCESS FLOW