



National Aeronautics and  
Space Administration

**John C. Stennis Space Center**  
Stennis Space Center, MS 39529-6000

## **John C. Stennis Space Center Standard for Variance and Alternate Standard Requests**

**Approved by:**

Signed by Christina Zeringue 2/5/18  
NASA SSC Safety & Mission Assurance Date

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NASA SSC Engineering & Test Directorate Date

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**Issued by:**

ISSUED CEF 2/5/18  
Central Engineering Files Date

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Responsible Office: NASA SSC Safety & Mission Assurance Directorate		
<b>SUBJECT: Variance and Alternate Standard Requests</b>		

## Document History Log

Revision	Date	Originator/Phone	Description
Basic	1/20/05	Don Beckmeyer/ ext. 8-3788	<p>Initial Release/Updated in new format - supersedes SSC STD 99-016 Rev. C-1, with the following changes:</p> <ol style="list-style-type: none"> <li>1. Changes as needed to section titles; deleted reference to Project Manager throughout.</li> <li>2. Included reference to SSC-517 being in the SSC Electronic Forms Index.</li> <li>3. Changes as needed for new document numbers; deleted "deviation," and "waiver" from title and throughout the document.</li> <li>4. Purpose statement added to 1.0; created applicability section 2.0;</li> <li>5. In 3.0, revised document names in accordance with the title of current versions, moved abbreviations to Appendix B, and renamed as Acronyms and Abbreviations.</li> <li>6. Deleted nos. 1 (alternate standard), 2 (deviation) and 3 (waiver) from section 4.0 and moved variance definition to section 7.0, (newly created), Definitions.</li> <li>7. Renumbering of sections includes former 5.0 Responsibility now renamed and renumbered to 4.0 Responsibilities. Added information regarding CEF, SMA Office and PTD and COD directors' responsibilities.</li> <li>8. Former 6.0 section Processing Deviations, Waivers and Variances became section 5.0, Preparation and Submittal of Variance Requests and Alternate Standard Requests, with subsections being re-numbered accordingly. Deleted statement in former section 6.1.3 regarding Proposed Action to Prevent Recurrence.</li> <li>9. Deleted reference (in former section 6.1.4) to signature blocks from contractor, SMA, CCB Chairperson and either the NASA Project Manager or FRB Chairperson.</li> <li>10. Deleted reference to CEF numbering of approved requests in former section 6.1.6.</li> <li>11. Deleted referenced to SSC form 517 in former section 6.1.7.</li> <li>12. Section 6.2 was modified (and is now section 5.3) to provide reference for providing alternate standard requests, and steps 6.2.1 and 6.2.2 were deleted.</li> <li>13. Appendix A was incorporated into this revision as part of section 5.0 of this revision.</li> <li>14. Deleted sections 6.18, 6.19, 6.20, 6.21 and 6.22 and incorporated signature requirements into part of section 5.0 of this revision.</li> </ol>

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Revision	Date	Originator/Phone	Description
Basic	1/6/05 (cont'd.)	Don Beckmeyer/ ext. 8-3788	<ul style="list-style-type: none"> <li>15. Added a flowchart (Appendix A in this document) to specify the process, and added four specifications to clarify the flowchart.</li> <li>16. SSC Form 517 was removed from this revision, but an example (for reference only) was added.</li> <li>17. Added places for concurrence signatures from PTD and COD. (cover sheet)</li> <li>18. Included the MUA process in sections 5.0 and on the flowchart.</li> <li>19. Extensive revision to the flowchart to document more clearly the role(s) of the PTD CCB and the FRB; to specify the process when a variance is rejected; to add the CEF responsibilities of assigning a number for each variance, filing variances, and copying and distributing variances; and specified when the SSC Director's signature is required.</li> <li>20. Changed references to SSC documents from Stennis Procedure &amp; Guideline (SPG) to Stennis Procedural Requirement (SPR), as appropriate.</li> <li>21. Changed references throughout to reflect current John C. Stennis Space Center Standards.</li> <li>22. Added specific reference to SSTD 8070-0006-CONFIG in section 5.1.5 and included same in section 3.0</li> </ul>
A	1/22/10	Ralph Gonzalez/ 8-2101	<ul style="list-style-type: none"> <li>1. 1.0, added "Alternate Standard".</li> <li>2. Corrected typographical and grammatical errors.</li> <li>3. Added reference SPLN-1200-0003, John C. Stennis Space Center Safety and Mission Assurance Technical Authority Implementation.</li> <li>4. 4.0g added The SMA Technical Authority is responsible for review of all variances and alternate standard requests in accordance with SPLN-1200-0003 prior to submittal to the CCB or to NASA Headquarters.</li> <li>5. 5.1.4 Extension revision. A new variance request is necessary for extensions of temporary variance.</li> <li>6. Appendix A-Flowchart added "Submit to SMA Technical Authority for review".</li> </ul>
B	1-20-12	Ralph Gonzalez/ 8-2101	<ul style="list-style-type: none"> <li>1. 4.0 (i): Added "pertaining to SMA requirements".</li> <li>2. Appendix A - Updated flow chart item relating to SMA TA adding "as applicable".</li> </ul>

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C	2-6-13	Ralph Gonzalez/ 8-2101	<ul style="list-style-type: none"> <li>• 2.0: Added criteria for SSC Center Director, NASA SMA Chief and NASA Chief Engineer approvals.</li> <li>• 3.0: Additional reference docs listed.</li> <li>• 4.0: Added subsections for areas of responsibility; Updated responsibilities for Requestor, SMA and E&amp;TD/Center Operations; Added requirement to ensure coordination with OSMA Chief and with NASA Chief Engineer.</li> <li>• 5.0: Added requirement to ensure coordination with SMA TA Board; Improved flow of variance process to ensure adherence with document requirements; Added Section 5.2 for Agency Level variances; Added Table in Section 5.5 listing signature requirements;</li> <li>• 7.0: Clarified definition for Alternate Standard Request.</li> <li>• Appendices: Broke up Appendix A into two separate flowcharts, Appendix A and Appendix B, for CCB and FRB.</li> <li>• Variance Form 517 updated to allow more space for information and signatures. Added signatures for OSMA Chief and NASA Chief Engineer.</li> </ul>
D	2/6/2018	Christina Zeringue 8-3169	Updated references. Administrative and format changes throughout document.

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## 1.0 PURPOSE

The National Aeronautics and Space Administration (NASA) will comply with applicable requirements, specifications, and/or policy documents. In circumstances where a particular requirement or specification cannot be complied with, a variance or alternate standard request shall be considered. This John C. Stennis Space Center (SSC) standard establishes the requirements and practices for the preparation and submittal of variance and alternate standard requests.

## 2.0 APPLICABILITY

The variance request shall be prepared and submitted when the need exists to depart from a particular requirement, specification, and/or policy document as specified in projects, contracts, and/or NASA Procedural Requirements, Standards, Manuals, and/or Handbooks.

Form SSC-517 must be completed by a requestor and approved by his/her supervisor, the NASA Safety & Mission Assurance (SMA) Chief, and the appropriate Configuration Control Board (CCB) representative. In certain instances, the approval of the SSC Center Director and/or the NASA Chief SMA or the NASA Chief Engineer will be required.

## 3.0 REFERENCED DOCUMENTS

Referenced documents are assumed to be the latest revision unless otherwise specified.

29 CFR Part 1960, *Basic Program Elements for Federal Employees (OSHA)*

NPR 8715.3, *NASA General Safety Program Requirements*

SOI-8040-0001-FACENG, *SSC Organization Instruction Construction Configuration Management*

SOI-8080-0015, *SSC Configuration Control of Technical Systems*

SOI-8080-0016, *SSC Material and Process Control for Propulsion Test Facilities and Systems*

SPLN-1200-0002, *SSC Engineering Technical Authority Implementation Plan*

SPLN-1200-0003, *SSC Safety and Mission Assurance Technical Authority Implementation Plan*

SPR 1150.1, *SSC Establishment of Charters – Boards/Councils/Committees*

SPR 1440.1, *Records Management Program Requirements*

SPR 8715.1, *SSC Safety and Health Procedural Requirements*

SSTD 8070-0006-CONFIG, *Component Servicing Processes and Documentation*

SSTD-8070-0091-FLUIDS, *SSC Requirements for Materials Used in LOX/GOX Service*

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#### 4.0 RESPONSIBILITIES

##### 4.1 Requestor

- 4.1.1 The requestor is responsible for preparing and processing the variance request and having the form approved by his/her Supervisor and the Customer (if applicable) before submitting to the Engineering and Test Directorate (E&TD) CCB or the appropriate Center Operations, Design and Construction Project Management Division (PMD) CCB chairperson.
- 4.1.2 The requestor shall generate a variance request as soon as the need has been identified.
- 4.1.3 The requestor shall ensure that risk mitigation actions/plans defined/described in the variance request are implemented as soon as practical, and that proper monitoring methods are employed, per NPR 8715.3.

##### 4.2 Central Engineering Files (CEF)

- 4.2.1 CEF is responsible for issuing a tracking number for each variance request. The numbers should be issued sequentially. The index and copies of the variances shall be readily available to the NASA SMA office for tracking and reporting purposes.
- 4.2.2 CEF is the repository for all variance requests that have been either approved or disapproved. CEF issues copies to appropriate CCB Chair and all signatories.
- 4.2.3 CEF keeps the original or a copy of the variance request with the official document. If the official document is electronic, an electronic copy of the variance should be available with the official document. This shall apply to permanent variances until the official document is revised, and also to temporary variances until the expiration date is reached.

##### 4.3 Safety and Mission Assurance (SMA)

- 4.3.1 The SMA Directorate is responsible for reviewing the status of all active variances and alternate standard requests. SMA will also examine variances for any significant trends which may lead to better corrective action.
- 4.3.2 The SMA Director and the requestor's Supervisor are responsible for reviewing and signing all variances.

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4.3.3 The SMA Technical Authority (TA) is responsible for review of all variances and alternate standard requests pertaining to SMA requirements in accordance with SPLN-1200-0003 prior to submittal to the CCB or to NASA Headquarters.

#### 4.4 E&TD Directorate / Center Operations Directorate

4.4.1 The Engineering Technical Authority (ETA) via the E&TD CCB is responsible for review of all variances and alternate standard requests pertaining to SSC Technical Standards or Agency Office of Chief Engineer (OCE) requirements in accordance with SPLN-1200-0002.

4.4.2 Prior to submission to the SSC Center Director for signature (if applicable), the E&TD Director and/or COD Director is/are responsible for signing all variances that are written against an Agency level requirement or against any SSC requirement that is derived from an Agency level requirement. In addition, approval of the Office of Safety and Mission Assurance (OSMA) Chief shall be obtained for all variances against Agency level SMA requirements as required in NPR 8715.3.

### 5.0 PREPARATION AND SUBMITTAL OF VARIANCE REQUESTS AND ALTERNATE STANDARD REQUESTS

#### 5.1 Processing Variance Requests (Form SSC 517)

5.1.1 Variance requests for Safety Requirements, Quality Requirements, Technical Standards, Operating Instructions, or Administrative Policy issues shall be prepared on form SSC 517 per instructions listed in Section 5.5 and processed per the requirements of Appendix A, Appendix B, and Section 5.0.

5.1.2 If the variance request is to be written against an SMA requirement, it shall be submitted to the SMA Technical Authority Board prior to submission to the CCB.

5.1.3 Variance requests shall be submitted with all necessary signatures to the appropriate CCB for approval:

- a. NASA E&TD CCB: Variance requests must be routed to the E&TD CCB for CCB Chairperson signature if they affect the configuration of the Test Stand and Test Stand Support systems, facilities, and documentation utilized in rocket propulsion testing at SSC as noted in the "Applicability" section of SOI-8080-0015, *Configuration Control of Propulsion Test Systems*. All variances that affect an SSC Technical Standard or an Agency OCE requirement shall also be routed to the CCB. The CCB is conducted in accordance with SOI-8080-0015. In certain cases, after CCB approval of a variance, the PMD CCB Representative on the E&TD CCB may require the variance be routed to the PMD CCB for review.



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- b. NASA PMD CCB: Variance requests must be routed to the appropriate PMD CCB if they fall outside the jurisdiction of the E&TD CCB. This would include any variance request that does not affect any area of interests described above.

- 5.1.4 All data blocks on the form shall be completed by the requestor. These blocks provide the information necessary for the CCB to evaluate the request.
- 5.1.5 Once approval or disapproval is obtained, the original shall be sent to CEF where the original will be filed, and copies of the request will be distributed to signatories. The reviewer(s) must provide (in writing) the rationale for the rejection of the variance request and suggestions (if any) as to how the variance might be modified to attain approval, and route it to CEF.
- 5.1.6 If an extension is required for a temporary variance, a new variance request must be generated, approved, and signed. Changing the date is not considered an administrative change to the original document. Administrative changes are considered to be the correction of typographical and/or grammatical errors.
- 5.1.7 If an urgent situation arises, in which urgent is defined as the accumulation of time delay having increased risk, the NASA SMA Director, with concurrence from a CCB Chairperson, may verbally grant a request which shall be followed by submission of form SSC 517 before the close of business the following scheduled work day. Even if granted on the telephone or by e-mail, the request should be immediately documented.
- 5.1.8 Variance Requests that are associated with Material Usage Agreements (MUAs) shall be processed per this standard. The MUA process is addressed in SSTD-8070-0006-CONFIG, *Component Servicing Processes and Documentation*; SSTD-8070-0091-FLUIDS, *SSC Requirements for Materials Used in LOX/GOX Service*; and SOI-8080-0016, *Materials and Process Control of Critical Propulsion Test Facilities and Systems*.

## 5.2 Processing Variance Requests for Agency Requirements

- 5.2.1 In addition to the approvals listed in Section 5.1, the E&TD Director and/or COD Director are responsible for signing all variances that are written against an Agency level requirement or against any SSC requirement that is derived from an Agency level requirement.
- 5.2.2 Approval of the NASA OSMA Chief shall be obtained for all variances against Agency level SMA requirements as required in NPR 8715.3.

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5.2.3 Approval of the NASA Chief Engineer shall be obtained for all variances against Agency level OCE requirements unless formally delegated to the Center Director per OCE guidance. An informational copy of the approved variance shall be forwarded promptly to the NASA Chief Engineer.

### 5.3 Processing Alternate Standard Requests - Relief of Federal/State/Tribal Regulations

The SSC NASA variance process does not apply to Federal/State regulations or to Tribal laws, codes, standards, directives, and orders. Any variance to those requirements must be submitted for approval to the appropriate Agency by the NASA OSMA Chief. SSC NASA SMA is responsible for submission of this request to NASA OSMA Chief for approval. See NPR 8715.3 for more information.

### 5.4 Personnel Safety

If the variance affects personnel safety, it will be accompanied by comments from any affected employees (or their representatives).

### 5.5 Instructions for Completing Variance Form (SSC-517)

Block 1. Request Number

This is a unique tracking number that is assigned by CEF. The requestor must contact CEF to get this tracking number.

Block 2. Date

Record the present date.

Block 3. Title

Assign a title to this request that will identify it in general terms.

Block 4. Location

Provide the physical location where this variance will be incorporated / implemented (if applicable).

Block 5. System

Provide the type of system this variance request affects (if applicable).

Block 6. Variance Type

Indicate if this is a temporary or a permanent variance.

- Temporary Variance – Check this block if the variance is for a limited time. Enter the “from:” and “to:” dates for which this request should be in effect.

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If the variance is “after the fact,” enter the date from when you believe the variance first occurred until the time this variance will not be required.

- Permanent Variance – Check this block if the variance should be a permanent change. This variance should then be incorporated into the next document revision.

Block 7. What Is The Requirement, Specification or Policy That Must Be Met?

This field details the requirement, specification, or policy that was not met; e.g., specifically the document number, revision, chapter, and paragraph.

Block 8. How The Requirement, Specification or Policy Has Not Been or Will Not Be Met?

Give a detailed explanation of how you are not able to meet the requirement, specification, or policy. State if it is before or after the fact.

Block 9. Why The Requirement, Specification or Policy Has Not Been or Will Not Be Met?

Give a detailed explanation why you are not able to meet the requirement, specification, or policy. State if it is before or after the fact.

Block 10. Provide Justification for Why This Request Should Be Approved.

Give a detailed justification explaining if the intent of the requirement is being met through alternate means and how. Are you accepting increased risk? What is the risk mitigation plan? What will happen if this request is not approved?

Block 11. What Action Can Be Taken to Prevent Recurrence?

Give a detailed explanation of what can be done to prevent this request from being re-submitted in the future. Can the requirement, specification, or policy be changed? Does a design need to be changed?

Block 12. How Will Cost, Schedule, and Performance Be Affected?

Give an explanation of how the approval or denial of this request will affect direct dollar costs to the government and indirect costs such as schedule and performance.

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Block 13. Signatures

The signature requirements for a Variance Request are as follows:

Title	Requirement for Signature
Requestor	Mandatory
Requestor's Supervisor	Mandatory
Customer	Required if the variance request affects customer-supplied hardware, software, or test performance in any way (applicable to E&TD).
SSC SMA Director	Mandatory
SSC E&TD CCB Chair	Mandatory for E&TD CCB action
SSC PMD CCB Chair	Mandatory for PMD CCB action
SSC E&TD Director	Prior to SSC Center Director; only required for variance against Agency level requirement or any requirement derived from an Agency level requirement.
SSC COD Director	Prior to SSC Center Director; only required for variance against Agency level requirements or any requirement derived from an Agency level requirement.
SSC Center Director	When required for variance against Agency level requirements or any requirement derived from an Agency level requirement.
NASA OSMA Chief	Only required for variance against Agency level SMA requirements per NPR 8715.3.
NASA Chief Engineer	Only required for variance against agency level OCE requirements (unless formally delegated to Center-level authority).

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## 6.0 RECORDS AND FORMS

Records and forms identified in this standard shall be maintained in accordance with applicable requirements of SPR 1440.1 and stored in CEF. For Quality Records, refer to the SSC Master Records Index. Forms shall be the latest edition unless otherwise specified and may be obtained from the SSC Electronic Forms repository or from the NASA SSC Forms Management Officer.

**SSC-517**, *Variance Request*

## 7.0 DEFINITIONS

**Variance** – A specific authorization to depart from a specified SSC Requirement, NPR Requirement, Specification, and/or Policy document. The requestor will designate if this variance is temporary, in which a time limit will be granted; or permanent, in which case the next document revision will incorporate the variance.

**Alternate Standard Request** – A written authorization to depart from a Federal/State regulations, or to Tribal laws, codes, standards, directives, and orders. Any departure from those requirements must be submitted for approval to the appropriate Agency by the NASA OSMA Chief in accordance with NPR 8715.3.

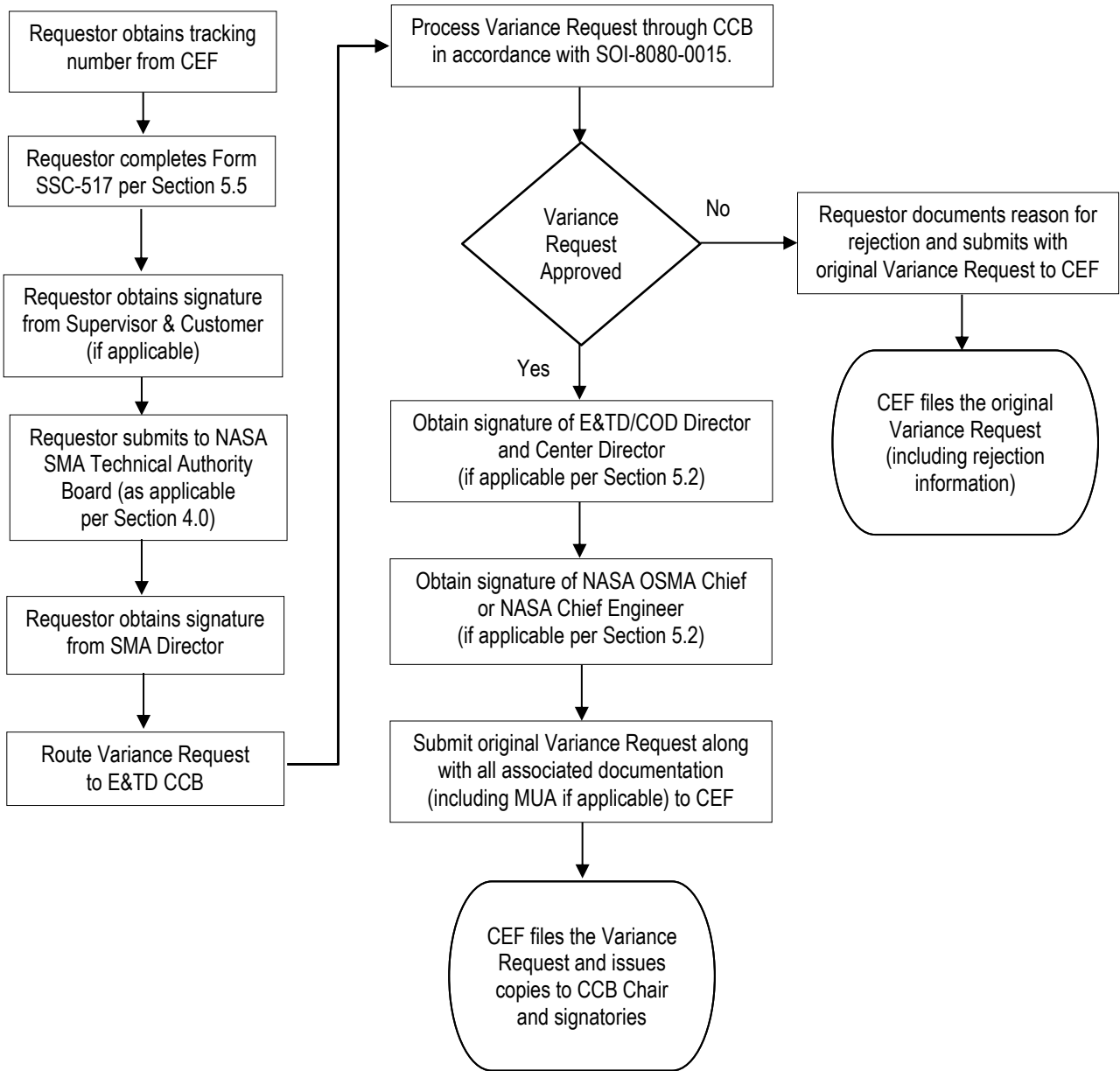
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## 8.0 ACRONYMS AND ABBREVIATIONS

<b>CCB</b>	Configuration Control Board
<b>CEF</b>	Central Engineering Files
<b>CFR</b>	Code of Federal Regulations
<b>COD</b>	Center Operations Directorate
<b>ETA</b>	Engineering Technical Authority
<b>ETD</b>	Engineering and Test Directorate
<b>GOX</b>	Gaseous Oxygen
<b>LOX</b>	Liquid Oxygen
<b>MUA</b>	Material Usage Agreement
<b>NASA</b>	National Aeronautics and Space Administration
<b>NPR</b>	NASA Procedural Requirement
<b>OCE</b>	Office of Chief Engineer
<b>OSHA</b>	Occupational Safety and Health Administration
<b>OSMA</b>	Office of Safety and Mission Assurance
<b>SBCC</b>	Stennis Boards/Councils/Committees
<b>SOI</b>	Stennis Organizational Instruction
<b>SMA</b>	Safety and Mission Assurance Directorate
<b>SPLN</b>	Stennis Plan
<b>SPR</b>	Stennis Procedural Requirement
<b>SSC</b>	Stennis Space Center
<b>SSTD</b>	John C. Stennis Space Center Standard
<b>TA</b>	Technical Authority

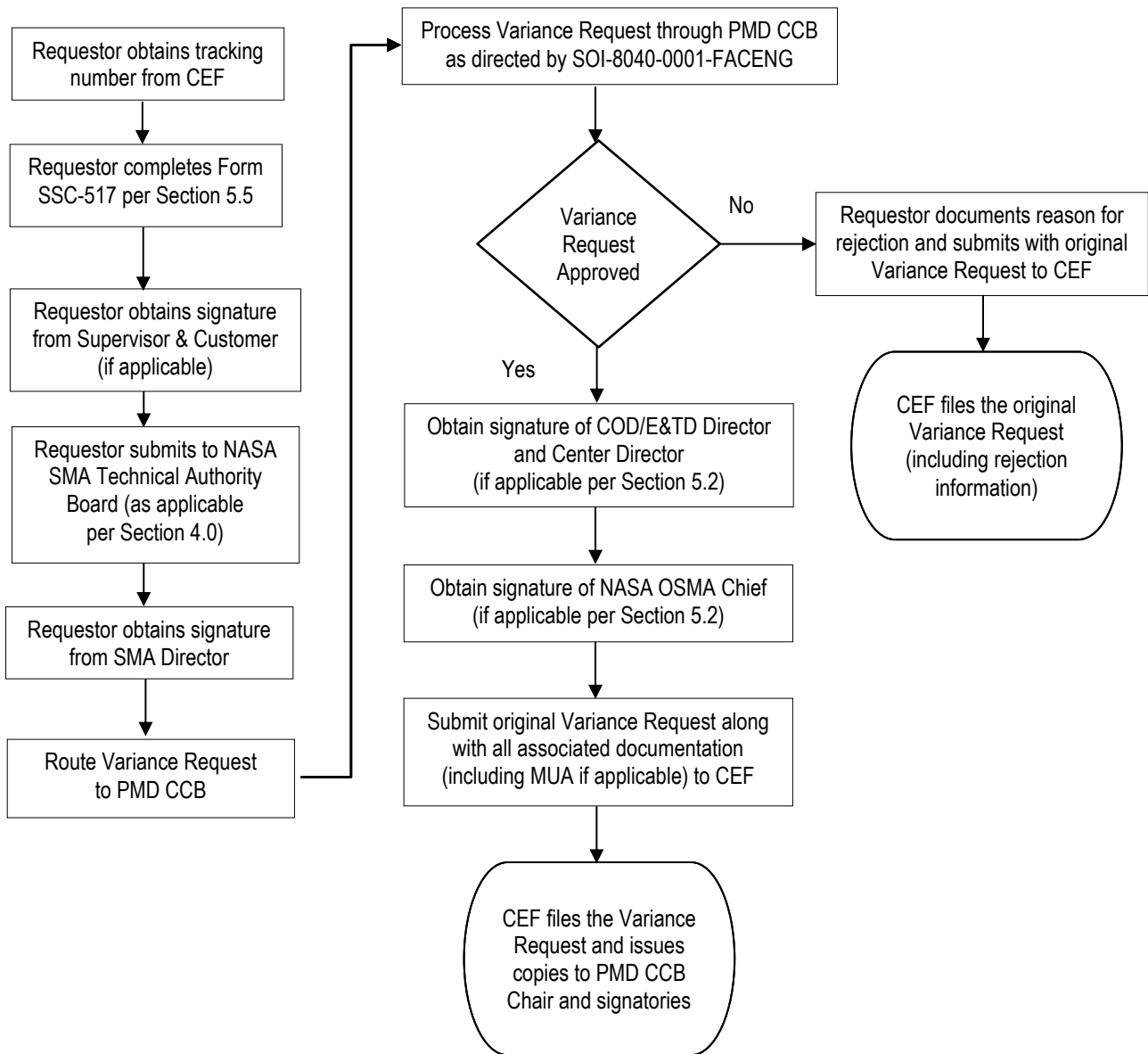
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**APPENDIX A - E&TD CCB - VARIANCE PROCESS FLOW**



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**APPENDIX B – PMD CCB - VARIANCE PROCESS FLOW**





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**APPENDIX C - VARIANCE FORM 517 (REFERENCE ONLY)**

 National Aeronautics and Space Administration John C. Stennis Space Center Stennis Space Center, MS 39529-6000		<b>VARIANCE REQUEST</b> (PROCESS FORM PER SSTD-8070-0007-CONFIG)	
1. REQUEST NUMBER		2. DATE	
TITLE			
4. LOCATION (if applicable)		5. SYSTEM (if applicable)	
6. VARIANCE TYPE			
<input type="checkbox"/> TEMPORARY VARIANCE      *From <input type="text"/> *To <input type="text"/> <i>*If this Temporary Variance request is "after the fact", enter the date from when you believe the variance first occurred until the date you estimate it will not be required.</i>			
<input type="checkbox"/> PERMANENT VARIANCE (To be incorporated into next document revision)			
7. REQUIREMENT, SPECIFICATION OR POLICY THAT MUST BE MET (Recall in detail the requirement, specification or policy that was or will be violated; e.g., state the document number, revision, chapter, paragraph, etc.)			
SAMPLE			
8. DESCRIBE HOW THE REQUIREMENT, SPECIFICATION OR POLICY HAS NOT BEEN OR WILL NOT BE MET (Give a detailed explanation of how you are not able to meet the requirement, specification or policy. State if it is before or after the fact.)			

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Stennis Standard	SSTD-8070-0007-CONFIG	D
	<i>Number</i>	<i>Rev.</i>
	Effective Date: February 6, 2018	
	Review Date: February 6, 2023	
Responsible Office: NASA SSC Safety & Mission Assurance Directorate		
<b>SUBJECT: Variance and Alternate Standard Requests</b>		

**VARIANCE REQUEST (Continued)**

9. STATE WHY THE REQUIREMENT, SPECIFICATION OR POLICY HAS NOT BEEN OR WILL NOT BE MET (Give a detailed explanation of why you are not able to meet the requirement, specification or policy. State if it is before or after the fact.)

10. PROVIDE JUSTIFICATION FOR APPROVAL OF THIS REQUEST (Give a detailed justification explaining if the intent of the requirement is being met through alternate means and how. Are you accepting increased risk? What will happen if this request is Not Approved?)

SAMPLE

11. STATE WHAT ACTION CAN BE TAKEN TO PREVENT RECURRENCE (Give a detailed explanation of what can be done to prevent this request from being submitted in the future. Can the requirement, specification or policy be changed? Does a design need to be changed?)

12. DESCRIBE HOW COST, SCHEDULE, AND PERFORMANCE WILL BE AFFECTED (Give an explanation of how the approval or denial of this request will affect direct dollar costs to the government and indirect costs such as schedule and performance.)

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Responsible Office: NASA SSC Safety & Mission Assurance Directorate		
<b>SUBJECT: Variance and Alternate Standard Requests</b>		

**VARIANCE REQUEST (Continued)**

13. SIGNATURES (Indicate Approved, Disapproved, or N/A, as appropriate. N/A denotes that approval or disapproval is not required per jurisdiction.)

REQUESTOR [Redacted]

REQUESTOR'S SUPERVISOR [Redacted]  Approved  Disapproved

CUSTOMER (if applicable) [Redacted]  Approved  Disapproved  N/A

SSC SMA DIRECTOR [Redacted]  Approved  Disapproved

SSC E&TD CCB CHAIR [Redacted]  Approved  Disapproved  N/A

SSC COD FRB CHAIR [Redacted]  Approved  Disapproved  N/A

SSC E&TD DIRECTOR (if applicable) [Redacted]  Approved  Disapproved  N/A

SSC COD DIRECTOR (if applicable) [Redacted]  Approved  Disapproved  N/A

SSC CENTER DIRECTOR (if applicable) [Redacted]  Approved  Disapproved  N/A

NASA OSMA CHIEF (if applicable) [Redacted]  Approved  Disapproved  N/A

NASA CHIEF ENGINEER (if applicable) [Redacted]  Approved  Disapproved  N/A

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