

Conduct of Engineering Request for Variance or Alternate Method

To display the *VAR Request Metadata* pane for this document, click **File > Info > Properties > Show Document Panel.**

1.0 General

1.1 Document Number: VAR-10711	1.2 Revision: 0				
1.3 Brief Descriptive Title: SDC-1, SDC-2, and Non-nuclear SSCs Seismic Parameter Increase; SDC-C Elimination					
1.4 Affected Program: Engineering Standards	1.5 Request Type: Variance				
1.6a Affected Tech Area 99	1.6b Affected Buildings Sitewide				
1.7 Requestor: Oruch, Tobin H Organization: ES-FE					
1.8 Revision History <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 15%;">Revision Number</th> <th style="text-align: left;">Changes and Comments</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Initial issue.</td> </tr> </tbody> </table>		Revision Number	Changes and Comments	0	Initial issue.
Revision Number	Changes and Comments				
0	Initial issue.				

2.0 Affected Conduct of Engineering Program/Documents

2.1 Affected "P" Document: <p style="text-align: center; color: blue;">N/A</p> If against the P document itself, revision (or N/A): <p style="text-align: center; color: blue;">N/A</p>	2.2 Subordinate or related document(s) [AP, master spec, LANL ESM chapter & section; or code, Order, standard, etc.]: Document Title/No.: ESM Chapter 5, Section II <div style="color: blue; margin-left: 20px;">Revision 12</div> Document Title/No.: TSM Ch. 5 <div style="color: blue; margin-left: 20px;">Revision 1</div> Document Title/No.: ESM Ch. 16, IBC-GEN, Att. B <div style="color: blue; margin-left: 20px;">Revision 10</div> Document Title/No.: All other affected Standards documents with statements in Field 2.4 including the Master Specifications and editing guides, and Standard Details. <div style="color: blue; margin-left: 20px;">Revision Enter text..</div>
2.3 Section/Paragraph: Varies by document	
2.4 Specific Requirement(s) as Written in the Document(s): All instances of seismic design parameters stated as $S_{DS} = 0.55g$ and $S_{D1} = 0.44g$. All instances allowing the use of SDC-C.	

2.5 Contractual, preference, or other basis for requirement in 2.4:

Enter text..

Use of site-specific parameters is a DOE-STD-1020 mandate (required by DOE O 420.1C) and allowed by the IBC. DOE STD-1020-2016 Sections 2.2 and 3.1.4 seismic design parameters S_{DS} and S_{D1} are to be used for the design of SDC-1 and SDC-2 SSCs and non-nuclear SSCs at LANL.

Limited use of SDC C was a result of the parameter magnitudes allowed by the IBC.

2.6 Type of VAR from ESM Chap 1, Z10 [Applies only to standards variances)

Type 2

2.7 Discipline

Structural

3.0 Request Information & Comments

3.1 NCR required (work has occurred)? No

If Yes, NCR Number: Enter text.

3.2 System/Component Affected

OpSystem Acronym & Name BLDG - Building

System Number or Name BLDG

3.3 Highest ML Level

ML-2

3.4 Proposal with Justification/Compensatory Measures:

1. Delete all references to use of Seismic Design Category (SDC) C, including ESM Chapter 5 R12, Section II.1.8.A.2, and TSM R1 Chapter 5 Section 3.A.2.

2. In ESM Chapter 16, IBC-GEN, Att. B, R10, delete SDC-C Exception to 304.3.1 and 304.3.2.

3. Use the following seismic design parameters for the design of SDC-1 and SDC-2 SSCs and non-nuclear SSCs at LANL:

Description	Parameter	TA-16	TA-03	TA-55/50	Sitewide
Seismic Design Parameters	S_{DS}	0.68	0.66	0.60	0.68
	S_{D1}	0.59	0.64	0.68	0.68

These coefficients and the elimination of SDC-C use must be applied to new designs that establish their Code of Record beginning December 11, 2024.

For projects underway but not yet in construction phase (Title I or II), Project Management should evaluate and determine whether the adoption of the interim parameters is appropriate.

Justification: Implements ES-DO-Memo-24-022, Rev. 1, 12/11/2024, LANL Interim Seismic Design Parameters (LANL internal, click [here](#))

NOTES:

1. This variance will be web-posted to the major design criteria documents affected (ESM, TSM; see Field 2.2 above) and on the webpages of the Master Specifications and Standard Details (however, it is not practical to post to each affected Standards document; projects are expected to update these lower-tier implementing documents as appropriate).

2. When an affected document is revised to eliminate SDC-C use and/or reflect new seismic parameters, it supersedes this variance.

3.5 Attachments
Document Title or Description [N/A](#)

3.6a Project ID N/A	3.6b: Project Name N/A	3.6c: Code of Record Date N/A
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3.7 Duration: Lifetime	3.8a If Finite Period, Start Date: Click to enter a date.	3.8b End Date: Click to enter a date
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3.8c Provide the PFITS number for tracking removal/correction: [\[PFITSNum\]](#)

3.9 USQD/USID required (Nuclear, High/Mod Hazard)? [No](#)
If Yes, USQD/USID Number [Click here to enter text.](#)

3.10 QA Review for process change matters potentially affecting LANL's NQA-1 implementation
Is a QPA Determination required?: [No](#) If **Yes**, then: [Choose an item.](#)
QPA Comments: [Enter text..](#)

3.11 POC Determination: [Accept](#)
POC Comments: [Enter text..](#)

3.12 Management Program Owner's (SMPO) Approval for P341 and APs; P342, ESM, ML-1 and -2, and Contract Matters; and P343

SMPO Determination: [Accept](#)
Comments: [Enter text..](#)

4.0 Participant Signatures **NOTE:** DO NOT ADD NAMES FROM WITHIN WORD! *Save and close the form first, then do 1-4 below:*

1. From the SharePoint library, select the document, then click the **ellipsis (...)** in the second column; a small dialog appears
2. In the small dialog click the **ellipsis** again
3. Click **Edit Properties** and check out the document if prompted to Enter names using the controls provided, then **Save**

4.1 POC (Management Program Owner's Representative): Coronado Restrepo, Carlos Arturo	Organization ES-SPD	Signature
4.2 Facility Design Authority Representative [FDARName] FDAR signature not required <input checked="" type="checkbox"/>	Organization Enter text..	Signature

<p>4.3 LANL Owing Manager (FOD or R&D/Program)</p> <p>[FODorPrgmMgrName]</p> <p>FOD or Program Manager signature not required <input checked="" type="checkbox"/></p>	<p>Organization</p> <p>Enter text..</p>	<p>Signature</p>
<p>4.4 Quality Reviewer's Name:</p> <p>[QPAName]</p> <p>QPA review/signature not required <input checked="" type="checkbox"/></p>	<p>Organization</p> <p>Enter text.</p>	<p>Signature</p>
<p>4.5 Safety or Security Management Program Owner's Approval for P341 and APs; P342, ESM and Contract Matters; and P343</p> <p>Richardson, Michael Joseph</p> <p>SMPO signature not required (Type 1 variance) <input type="checkbox"/></p>	<p>Organization</p> <p>ES-DO</p>	<p>Signature</p>
<p>4.6 Additional Signer 1</p> <p>[AdditionalSigner1]</p> <p>Role: Enter text.</p>	<p>Organization</p> <p>Enter text.</p>	<p>Signature</p>
<p>4.7 Additional Signer 2</p> <p>[AdditionalSigner2]</p> <p>Role: Enter text.</p>	<p>Organization</p> <p>Enter text.</p>	<p>Signature</p>
<p>4.8 CoE Administrator Signature</p> <p>Leyba, Matthew Anthony</p> <p>NOTE: The CoE Admin is always the last signature placed on this document. The date of that signing is the date of this document.</p>	<p>Signature</p>	