Los Alamos NATIONAL LABORATORY EST. 1943

Conduct of Engineering
Request for Variance or Alternate Method

Assigned by SMPO or SMPOR: ☐ Alternate Method ☒ Variance Tracking number VAR- 2012-053

1.0 Affected Document(s)

☐ Engineering Processes (e.g., P 341) ☒ Engineering Standards (e.g., P 342) ☐ Engineering Training & Qualification (e.g., P 343) If against P documents themselves, revision: _____	Subordinate (Functional Series) document if applicable (ESM Chapter, Master Spec, AP, etc.): Document Title/Number: ESM Chapter 5 Revision: Rev 6, 6/20/2011
Section/Para Section II Paragraph 1.7.2A	
Specific Requirement(s) as Written in the Document(s) 1613.5.4 Design spectral response acceleration parameters. Substitute the following text: Five percent damped design spectral response acceleration at short periods, S_{ps} = 0.75 g. and at 1-second period, S_{p1}, =0.64g.	

2.0 Request

Brief descriptive title: New Design Spectral Response Accelerations for PC1 and PC2 SSC at TA55 and CMRR.				
NCR required (work has occurred)? ☐ Yes ☒ No		If Yes, NCR Number		
TA-Bldg-(Room) and/or Project Affected TA-55 all encompassing		System/Component Affected SSCs within the TA-55 Complex		
Proposal Per the memorandum, "Design Basis ground Motion for Use in the Design of PC1 and PC2 Facilities at Los Alamos National Labortory (SAFER-012-001) issued by Michael Salmon on January 18, 2012, the design spectral response for PC1 and PC2 SSC should be reduced to the following for application to new design of structures, systems and components at TA-55 or CMRR. These values are in addition to those listed in the ESM. The more conservative (larger) than the two values may be used by engineers if desired,: • Short period, S_{ps}.=0.60 • 1-Second Period, S_{p1}, =0.52 These parameters greatly reduced the seismic design demand for PC1 and PC2 SSCs, and until the LANL ESM Chapter 5 Section II adopts this change, the request is to allow for immediate implementation of designs that fall within this revision of the ESM.				
Justification/Compensatory Measures The spectral acceleration values currently listed in the ESM are based on data from the 2007 Update to the Probabilistic Seismic Hazards Assessment, and are generally applicable to design anywhere at LANL. The spectral acceleration values proposed are from the 2009 Update to the Probabilistic Seismic Hazards assessment and are more appropriate for design at TA-55 and CMRR. It is also anticipated that this will be added to the earliest possible revision of the LANL ESM.				
Duration of Request: Unlimited until implementation into the LANL ESM	Start Date: January 18, 2011		End Date: N/A	☒ Lifetime
Requestor Jeremy M. Nowell, P.E.	Z Number 233343	Organization OS-BSI @ ES-55	Signature Signature on File	Date 2/8/2012
USQD/USID required (Nucl. High/Mod Hazard)? ☐ Yes ☒ No		If Yes, USQD/USID Number		
Design Authority Representative Dave Haring	Z Number 107159	Organization ES-55	Signature Signature on File	Date 2/8/2012
LANL Owning Manager (FOD or Programmatic) Derek Gordon	Z Number 107621	Organization ES-55	Signature Signature on File	Date 2/8/2012

3.0 Safety Management Program Owner (SMPO) Representative (SMPOR/POC)

☐ Decline	☒ Accept	☐ Accept Labwide	☐ with Modification:
POC Michael W. Salmon	Z Number 115793	Signature Signature on File	Date 2/8/2012

4.0 Additional Approval for P341 and APs; P342, ESM, Code, and Regulation Matters; and P343

☐ Accepted	☒ Accepted with comments	☐ Declined	
Comments: See comments on Page 3.			
Safety or Security Management Program Owner Daniel Steinberg	Z Number 219039	Signature Signature on File	Date 3/2/2012

Safety Management Program Owner Comments

"The attached calculation provides verification of the seismic coefficients proposed in this variance. Furthermore, should it be necessary to perform a response spectrum analysis for a PC-1 or PC-2 structure system and component at TA-55, the response spectrum labeled "Site Spec Alt Function" shown in Figure 6 on page 19 of the calculation should be used."