Los Alamos NATIONAL LABORATORY EST.1943

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-10683	1.2 Revision: 0
1.3 Brief Descriptive Title: Locating electrical service disconnects outdoors (new requirement)	
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: Stromberg, Eric Roland Organization: ES-DO	
1.8 Revision History Revision Number Changes and Comments 0 Initial issue.	

2.0 Affected Conduct of Engineering Program/Documents

2.1 Affected "P" Document: P342 Engineering Standards If against the P document itself, revision (or ***N/A***): N/A	2.2 Subordinate or related document(s) [AP, master spec, LANL ESM chapter & section; or code, Order, standard, etc.]: Document Title/No.: ESM Chapter 7, Section D5010 Revision 5 Document Title/No.: Enter text.. Revision Enter text.. Document Title/No.: Enter text.. Revision Enter text..
2.3 Section/Paragraph: 2.3 Disconnecting Means	
2.4 Specific Requirement(s) as Written in the Document(s): A. The disconnecting means for each supply permitted by NEC® Section 225.30 or 230.2 shall consist of a single circuit breaker or a single switch.[46]	
2.5 Contractual, preference, or other basis for requirement in 2.4: Paragraph A is a preference, as it was not required by the previous version of NFPA 70 (the new, adopted, NFPA 70 version has this requirement).	
2.6 Type of VAR from ESM Chap 1, Z10 [*Applies only to standards variances*) Type 2	2.7 Discipline Electrical

3.0 Request Information & Comments

3.1 NCR required (work has occurred)? No

If Yes, NCR Number: Enter text.

3.2 System/Component Affected	3.3 Highest ML Level
OpSystem Acronym & Name ES - Electrical Systems System Number or Name EP	ML-1

3.4 Proposal with Justification/Compensatory Measures:

Proposal

Replace existing requirement at 2.3.A, which is no longer necessary due to its presence in NFPA 70, with the following new requirement regarding disconnect location and new footnote 46 wording as shown below:

A. The disconnecting means for a building or structure, whether it is fed from the Utility or from a feeder, shall be located on the outside of the building or structure. Locating it inside is only permitted with the written approval of the Electrical Standards POC. Examples of where indoor service equipment will be approved:
    1. Sensitive buildings where an outside disconnect is a security concern
    2. Services or feeders of 2000 amps or greater[46]
    3. Fire pump controllers that are fed directly by a utility transformer

[46] An external shunt-trip may be required by LANL-UI for load shedding purposes, prior to UI opening utility side fuses. Shunt-trip devices are not recognized by NFPA 70 as being a legitimate replacement for service disconnects; therefore, all NFPA 70 requirements for the service disconnect still must be met.

Justification

LANL preference for improved safety. NFPA 70 currently allows the service equipment to either be outside or inside. (If inside, the service equipment must be "nearest the point of entry" of the service conductors.) However, many municipalities require the service to be on the outside of the building for the benefit of first responders. LANL UI has asked for a requirement that the disconnect be on the outside of the building and Fire Protection supports this requirement.

Here is the rationale for the three exceptions listed:

1. There have been some sensitive buildings that have asked specifically for the disconnect to be inside the building, and this has been allowed. In these cases, the fire department is notified of the location of the disconnect.
2. Request of UI, rationale captured in new footnote 46.
3. Agreement by UI and FP. Fire pumps are unique and fall under an additional set of codes and standards.

3.5 Attachments

Document Title or Description n/a

3.6a Project ID	3.6b: Project Name	3.6c: Code of Record Date
n/a	n/a	n/a

3.7 Duration:	3.8a If Finite Period, Start Date:	3.8b End Date:
Lifetime	Click to enter a date.	Click to enter a date

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 toEnter names using the controls provided, then **Save***

4.1 POC (Management Program Owner's Representative): Stromberg, Eric Roland	Organization ES-DO	Signature ERIC STROMBERG (Affiliate) Digitally signed by ERIC STROMBERG (Affiliate) Date: 2024.06.17 15:51:55 -06'00'
4.2 Facility Design Authority Representative [FDARName] FDAR signature not required ☒	Organization Enter text..	Signature
4.3 LANL Owning Manager (FOD or R&D/Program) [FODorPrgmMgrName] FOD or Program Manager signature not required ☒	Organization Enter text..	Signature

4.4 Quality Reviewer's Name: [QPAName] QPA review/signature not required ☒	Organization Enter text.	Signature
4.5 Safety or Security Management Program Owner's Approval for P341 and APs; P342, ESM and Contract Matters; and P343 Richardson, Michael Joseph SMPO signature not required (Type 1 variance) ☐	Organization ES-DO	Signature THOMAS WANDO (Affiliate) Digitally signed by THOMAS WANDO (Affiliate) Date: 2024.06.19 07:19:51 -06'00'
4.6 Additional Signer 1 De La Torre Jr., Rafael Role: System Engineer	Organization ES-UI	Signature RAFAEL DE LA TORRE (Affiliate) Digitally signed by RAFAEL DE LA TORRE (Affiliate) Date: 2024.06.18 06:40:04 -06'00'
4.7 Additional Signer 2 Dotson, Keenan Thomas Role: Fire Protection Office	Organization FP	Signature KEENAN DOTSON (Affiliate) Digitally signed by KEENAN DOTSON (Affiliate) Date: 2024.06.18 08:21:54 -06'00'

4.8 CoE Administrator Signature Leyba, Matthew Anthony NOTE: The CoE Admin is always the last signature placed on this document. The date of that signing is the date of this document.	Signature Matthew Leyba Digitally signed by Matthew Leyba Date: 2024.06.19 09:16:45 -06'00'