
ENGINEERING STANDARDS UPDATE

[Standards are serious business](#) but this newsletter isn't always.

Topics this month:

- **Bryan Haver Takes on Conduct of Engineering**
- **Training & Qualification**
- **LANL Standards Issued in April**
- **Engineering Processes News**
- **National Standards Action**
- **DOE Standards Action**
- **MSS Document Action**
- **When Good Conduct of Engineering Isn't Followed**

Note: This newsletter has hyperlinks all over but their formatting may not show, so please hover your cursor where you might expect one.

The LANL Standards Homepage: <https://engstandards.lanl.gov/index.shtml>

BRYAN HAVER TAKES ON CONDUCT OF ENGINEERING

Bryan, who joined Engineering Services a few weeks ago to lead the Business Services function, has now been tapped to also manage the ES Facility Engineering group and the Conduct of Engineering Office in an acting capacity through August at least, among other things. He'll be largely transitioned into this within a week or so, supported by Sarah Murdock who will be focusing on the Engineering Process (aka AP) program and the rest of us in FE.

Found this new grill at Walmart, they have hundreds of them.



TRAINING & QUALIFICATION**Admin**

E-mail for COE Training: es-do-tng@lanl.gov

Use the addy linked above for any kind of help with COE training issues like requesting course sessions, getting registered, missing credit, etc. The email goes to the whole team: Stan Hayes, Nick Jones, Sadonna Tapia, Santana Quintana, and Chris Martinez.

E-mail for COE Qual Program: COEQuals@lanl.gov

Click this addy for any kind of help with COE quals such as CSE, PrE, Design, Project, PSO, FDAR, and other qualified positions (and also SHR matters for CSEs). Goes to the whole team: Deb Cushner, Jess Blea, and Barb Dela Cruz.

Instructor-Led Course Request/Registration Guide

For courses that don't yet have a session set in UTrain, there's a step-by-step guide posted to the CoE T&Q "Resources" page

<https://int.lanl.gov/org/ddops/aldfo/nuclear-safety/engineering-services/conduct-of-engineering/assets/resources/instructor-led-course-registration-FAQ.pdf>

Courses**Commercial Grade Dedication Courses, series begins this Mon, May 8, via Teams**

The following classes will be taught by John Lamendola and Chris Hartz. The next series slated for the last week Oct which is normally scary, so don't wait.

CGD Overview, 8am-noon Monday May 8, UTrain 30726 "COE Commercial Grade Dedication Overview," Intro to commercial grade dedication for nuclear service per AP-341-703. To be an actual preparer of CGDs, you also need to take the 30727 preparers course later (like on the 10th).

CGD Preparers Course 30727, 8am-5pm on Wed, 5/10

Required if you perform or approve commercial grade dedication packages for nuclear service; you must have taken prerequisite Course 30726, CGD Overview, before taking Preparers."

ESM Chapter 21 Software -- Overview and Owners Courses -- series begins Tues, May 16, Teams

A few of you are new "Owners" of nuclear safety or other ML-1, -2, or -3 software (installed in a system, or maybe for design/analysis). If you follow ESM Chapter 21 Software then you need to take training on the chapter. The managers (including FDARs) of Owners only need the overview.

So...if you, in fact, need training, please register in Utrain for the course(s) below. If you're not sure what you need, contact SME/instructor Joy Getha, 5-9586, jlgetha@lanl.gov or Oruch.

- 38047 ESM Chapter 21 Software Overview, 3 hours. (RLMs and Owners): Tuesday, May 16, from 9 am - noon.
- 34048 ESM Chapter 21 Software Owners (3 additional hours, just Owners return for this): Thursday, May 18, also from 9 am - noon.

This is no doubt the last time SME Joy Getha will teach these, so please make every effort to set aside these times to take these courses. The next offering is tentatively Nov 7 & 9, 9 am - noon.

Intro to LANL Engineering Standards, 24140 – June 19-22 (M-Tr, must attend all 4 days), 2:00-4:00 PM Teams

Note: Last scheduled offering, next session is TBD.

Attend each day to receive credit (it's 8 contact hours, despite what UTrain may say). You'll need to block your own calendars. Register in UTrain. If that fails, contact es-do-tng@lanl.gov with Z number. Provides familiarity with national and LANL engineering standards for anyone performing, reviewing, or managing design activities. **Required course for many LANL engineers**, recommended for those at local AE firms, and **only taught a few times a year -- so try to attend**. Students are only ever required to take this course once.

When they open Powerpoint and you see slide "1 out of 243"



P841-1, Quality Procurements Briefing May 23, 2-3 pm

P841-1, *Quality Procurements*, revised/reissued provisionally on April 13, will now become effective July 25. This is a significant change to the procurement quality program including the Exhibit H, supplier evaluation, and item/service acceptance. P841-1 also expands the scope of the procurement quality program, so some items and services currently procured as ML-4 will become quality risk level (QRL-)3 and be subject to procurement quality requirements.

To prepare to implement these changes, organizations must:

- Identify and train sufficient P-TSMEs to process procurements
- Identify and request evaluation of suppliers as soon as possible using the **Form 1953** (QRL-1 and -2 suppliers) or Form **IQPA-IQ-FD-095** (QRL-3 suppliers)

To find out more, please visit the [P841-1 Info Hub](#) or attend this upcoming virtual brown bag.

Meeting date/time: May 23, 2-3pm. **Logon info:**
[Microsoft Teams meeting link](#) Meeting ID: 299 756 609 257, Passcode: mZAa3t, Call-in (audio only): +1 575-323-9652, Phone Conference ID: 787 804 946#

LANL STANDARDS ISSUED IN APRIL <https://engstandards.lanl.gov/>
Engineering Standards Manual ESM [STD-342-100](#)

ESM-Chapter	Section	Title	Rev.	Date	Comments
2-Fire, 16-Building Code Program	References	n/a	-	-	Errata files for 2021 IFC, IBC, and IEBC commentary pdfs posted.
For the Electrical chapter, thanks to POC Eric Stromberg, the Electrical technical committee, and SMEs:					
7-Electrical	D5090	Other Electrical Systems	6		For EGS, SEPSS, and UPS, clarified the scope of NFPA level 1 and level 2, and that optional standby systems are not level 1 or level 2. For UPSs, added requirement for isolation transformer for the bypass circuits. For standby battery systems, clarified scope. Article on computer room signal reference grids deleted as these are no longer used. For lightning protection, major rewrite including when needed, superseding older material in Chapter 2; deleted soil contact resistance requirements since removed from DOE-STD-1212. Added Requirements ID Log references (LANL internal-use log posted with chapter).
	D5090 Reference	Lightning Protection NFPA 780 Annex L Calculator	1.0	2023-4-27	New!!!
	G4090	Other Site Electrical Systems	3		For cathodic protection, removed requirement for above ground systems and updated NACE standards numbers. For grounding, restructured article; clarified scope, need of a 4/0 bare conductor in a duct bank, and requirements for fence grounding; removed soil contact resistance requirements and associated testing requirements; and added ground contact resistance testing guidance. Added Requirements ID Log references (LANL internal-use log posted with chapter).
14-Sustainable Design	References	various	-	-	References organized and updated. Thanks to POC Dee Bangert.
16- Building Code Program	References	various	-	-	LBO Construction Plan Reviewers List updated on ES-DO's LBO webpage

				https://int.lanl.gov/org/ddops/aldfo/nuclear-safety/engineering-services/lanl-building-official/index.shtml . Thanks to David Smith and nominating managers.
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Master Spec Sections STD-342-200

Section Number	Rev.	Section Title	Effective	Summary
25 0519	2	Low Voltage Electrical Conductors and Cables For BAS Electrical Systems	4/3/2023	Minor clarifications throughout. Thanks to POC Allen Hayward.
25 5256	0	Building Automation Systems (BAS) Programming	4/20/2023	NEW!!! Thanks to POC Allen Hayward.
26 4115	5	Lightning Protection for Explosive Facilities	4/28/2023	To align with ESM Chapter 7 Section D5090 Rev. 6, removed material in NFPA 780, reference to DOE-STD-1212, and calculated values for the soil contact resistance. Deleted chemical ground rods, backfill, test well boxes, testing. Other changes throughout. Thanks to POC Eric Stromberg.



BUILDING SAFETY MONTH 2023

It Starts with YOU!



BUILDING SAFETY IS...

PERSONAL	LOCAL	GLOBAL
Week 1 (May 1-7) Building Safety Starts at Home	Week 3 (May 15-21) Prepare Your Community	Week 5 (May 29-31) Solving Challenges Together
Week 2 (May 8-14) Building Safety Professionals and You	Week 4 (May 22-28) Advocate for Your Community	

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www.buildingsafetymonth.org #BuildingSafety365 

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ProtoSTAR

For any forthcoming projects approved by CoE variance to use this NNSA design criteria approach, Rev. 1 of LANL's Addendum was issued April 18. POC: Oruch.

ENGINEERING PROCESSES NEWS

From CoE Eng Process Manager Sarah Murdock, smurdock@lanl.gov, 667-7788:

The attached Variance has been approved and issued.

AP-341-626, R0.1, Design Interface	
Control https://coe.lanl.gov/APs/AllAPs/Forms/APbyNumber.aspx	
Issued 4/11/2023	VAR-10594, Systems Engineering Interface Management, issued changing two requirements in Section 3.1 on ICDs. Thanks to Arnold Eng and Dax Contreras.
Effective 4/11/2023	

Please enter issues with APs in the SharePoint issues database (Standards has this tool also). Use the button below, same one that's found in the upper right of the Processes SharePoint [homepage](#).



NATIONAL STANDARDS ACTION

[Online National Codes & Standards](#) ←link

Document: [ACI 301](#), Specifications for Concrete Construction (ACI 301-20)

Publication Date: September 2020

Type of Change: Errata/Erratum

Re NFPA 70, the 2023 is now available on IHS (read-only as all NFPA are; older editions like the 2017 and 2020 are still available there). The Electrical Safety Committee is already digesting the changes but LANL won't be adopting for a long time since we just adopted the 2020 (as did NM), as noted last month.

Document: [NFPA 70](#), National Electrical Code

Publication Date: 2023

Type of Change: Complete Revision

Unpublished image of the birth
of an electrician (still with
the eggshell on his head)



DOE TECHNICAL STANDARDS ACTION

[Tech Stds Program postings](#) in the past month on the [Technical Standards Portal](#):

[DOE-NA-STD-3016-2023, Hazard Analysis Report for Nuclear Explosive Operations](#)

The purpose of this Technical Standard is to define requirements and guidance for preparing HARs for NEOs in accordance with 10 C.F.R. Part 830. The general requirements for operation-specific HARs are those contained in DOE-STD-3009, "Preparation of Nonreactor Nuclear Facility Documented Safety Analysis," or successor directives. These general requirements are more fully developed in this Standard in order to account for issues unique to NEOs and interface issues with the facility or special operations (e.g., transportation).

MSS DOCUMENT ACTION

Below are recent changes issued by Maintenance and Site Services Division per Jeremy vonHarders.

Operation and Maintenance Criterion and related Preventative Maintenance Instructions (PMI) are standards with which system and plant engineers should be familiar. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities. Questions? Contact the document author shown on its approval page.

Access here:

<https://logistics.lanl.gov/MSS/layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx> If you have issues with SharePoint sites use a Microsoft browser (e.g., Edge) to access them.

MSS-MP has issued this:

O&M 507 Rev 11: Lightning Protections Systems (5/2/2023)

- Removed 10 ohm ground resistance test value and allowance to use clamp on earth resistance tester on explosive facilities.
- Template update

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

No matter how Space-X tries to spin it, it's hard for me to see the multiple engine failures and the need to terminate the Starship/Super Heavy flight as anything but a CoE failure. While most rocket programs have launch failures in the early years, lack of a launch pad flame trench is ridiculous.



How powerful was that SpaceX Starship liftoff? It blasted concrete up to 6.5 miles away
SpaceX's launch of its massive Starship rocket blasted concrete up to 6.5 miles away and resulted in more than 300 acres of debris, according to the U.S. Fish and Wildlife Service.
<https://www.latimes.com/business/story/2023-04-26/spacex-starship-explosion-blasted-concrete-up-to-6-5-miles-away>

The Messy Reality of Elon Musk's Space City

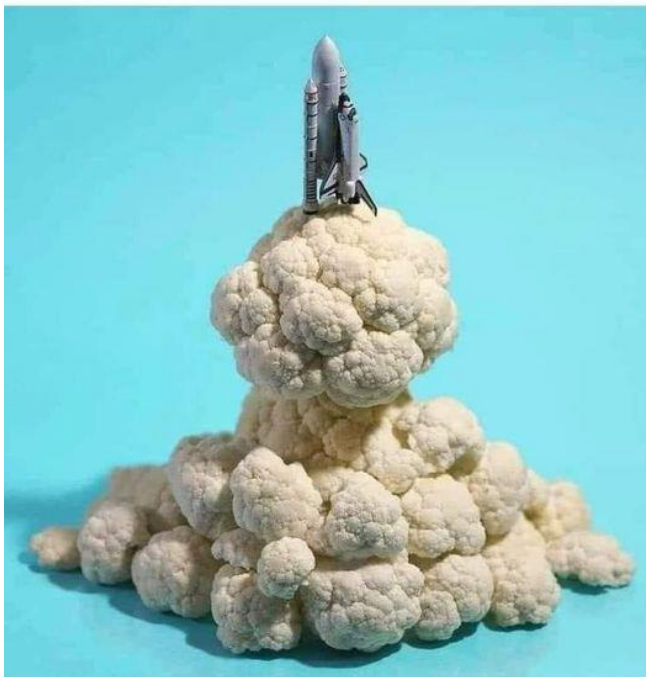
SpaceX's explosive launch covered a Texas town in grime. It's the latest dustup in the company's unneighborly saga.

https://www.theatlantic.com/science/archive/2023/04/spacex-starship-explosion-dust-debris-texas/673881/?utm_source=apple_news

And, of course, there are snarky memes (some no doubt due to opinions on Elon Musk).



Finally found a good use for cauliflower



LAST MONTH'S UPDATE TOPICS

Miss an issue? The archive is at "Monthly Update" on the Standards homepage.

Last month's topics:

- Code Adoption Complete!
- Standards Program Welcomes Neha Gidwani!!
- Steel Yourself
- Training & Qualification
- LANL Standards Issued in March
- Engineering Processes News
- National Standards Action
- DOE Standards Action
- MSS Document Action
- When Good Conduct of Engineering Isn't Followed

**The views expressed in this email are not necessarily those of my employer.
To request a change to this newsletter's distribution, please contact me.**

Tobin Oruch, Engineering Standards Mgr

Los Alamos Nat'l Lab, Conduct of Eng Program Office

(505) 665-8475 oruch@lanl.gov <https://engstandards.lanl.gov/>

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(With the support of Alan Yaeger and Neha Gidwani in the Standards Team and many others in the CoE Office. Contacts for

them: <https://int.lanl.gov/org/ddops/aldfo/nuclear-safety/engineering-services/conduct-of-engineering/index.shtml>