
ENGINEERING STANDARDS UPDATE

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

Topics this month:

- Training & Qualification
- Procurement Quality Risk Levels
- Sustainable Design Corner
- LANL Standards Issued in July
- Engineering Processes News
- National Standards Action
- When Good Conduct of Engineering Isn't Followed

LANL Engineering Standards: <https://engstandards.lanl.gov/>

Note: This newsletter has hyperlinks all over but their formatting may not show, so please hover your cursor where you might expect one. It's like fly fishing that way.

**TRAINING & QUALIFICATION**

Re: Course 24140 Engineering Standards (taught last week): Students, it'll might take a few days to reconcile the rosters and update UTrain; thanks for your patience.

Safety Basis for Engineers, Course 39564, Tues, Aug 16, 1-3 pm, MSTeams

Course is required for and will help CSEs and PrEs learn what they need to know about Safety Basis to prepare for their oral boards and their engineering duties. Has lots of TA55 examples but is generally applicable to any nuclear facility. POC: Joy Getha, 5-9586, jlgetha@lanl.gov. Please sign up for this course in UTrain by the 12th so Joy can email the handouts.

[Click here to join the meeting](#)

Or join by entering a meeting ID: Meeting ID: 270 359 961 17

Or call in (audio only -- so are you really getting the material you should?)

[+1 575-323-9652](tel:+15753239652), [101926037#](tel:+15753239652) United States, Las Cruces

Phone Conference ID: 101 926 037#

Registering for UTrain Courses: Go to [UTrain](#), search on course, select and enroll. Disenroll if you have to bail. [AEs can also register for some; use token (CryptoCard) or contact ES training person Stan Hayes (sehayes@lanl.gov) or Nick Jones, (n.jones@lanl.gov) with Z number. The instructor may have to invite you to Teams or Webex specifically just before starting time.

PROCUREMENT QUALITY RISK LEVELS

To help usher in the provisional (pending) procurement quality document, [P841-1](#), *Quality Procurements*, that will be effective October 25, here's a little introduction to the concept from the P841-1 Project Team.

Note, they have an Info Hub page that may help:

<https://int.lanl.gov/org/ddops/aldeshqss/quality-performance-assurance/institutional-quality/p841.shtml>

And you can email p841-team@lanl.gov with questions.

And here's the nugget: [P841-1](#), *Quality Procurements*, implements a new graded approach that will use quality risk levels (QRLs) instead of management levels (MLs) to ensure quality of procured items. The chart below shows how QRLs and MLs will be used in [P841-1](#).

Applicability of MLs and QRLs under P841-1, <i>Quality Procurements</i>	
Management Level (ML) Applicability	Quality Risk Level (QRL) Applicability
<ul style="list-style-type: none"> Structures, Systems, and Components (SSCs), Software, and associated activities that fall under the scope of PD340, <i>Conduct of Engineering and Configuration Management for Facility Work</i>. ML informs QRL determination only where an ML is applicable as described in PD340. 	<ul style="list-style-type: none"> Applies to non-weapons items and services as described in IQPA-IQ-FSD-011, <i>Quality Risk Level Determination for Procurements</i>. QRLs define the rigor for activities described in P841-1 such as supplier evaluation, Exhibit H, and item/service acceptance (e.g. receipt inspection). Once the procurement is processed and the item/service accepted by LANL, the QRL is no longer applicable to the procured item/service.

SUSTAINABLE DESIGN CORNER
(but nobody puts Baby in the corner)

Here are some news items.

Firstly, [Dalinda “Dee” Bangert](#) is the new POC for Chapter 14, Sustainable Design.

There’s a new Executive Order on building net-zero-carbon-emission buildings that LANL’s about to implement via the chapter.

Lastly, DOE-FEMP recently sponsored an event; they said the following, posted the presentations, and advertised additional seminars:

The [2022 National Energy Codes Conference](#) was a huge success. More than 20 thought leaders from the energy codes community discussed some of the most pressing topics in buildings. Thanks to everyone who participated in this year’s event! Visit the [Energy Codes 2022 website](#) for session presentations.

2022 NECC Seminar Series

The [NECC Seminar Series](#) is back! The Series provides an opportunity to dig further into topics that simply wouldn’t fit in our two-day NECC agenda. Each biweekly session will materialize across a range of engaging formats, from topic-based lectures to expert panels to interactive discussions. View the scheduled lineup below and view our [Seminar Series website](#) for more information about each session. This year’s topics will include:

- August 18: TAKING CHARGE OF CLIMATE CHANGE THROUGH STRETCH CODES [Register](#)
- September 8: ENERGY CODES AND UTILITY PROGRAMS: THE PEANUT BUTTER & JELLY OF ENERGY EFFICIENCY [Register](#)
- September 22: ENERGY CODE IMPLEMENTATION: INSIGHTS FROM THE FIELD TO THE CLASSROOM [Register](#)
- October 6: LESS IS MORE: BUILDING TO ZERO ENERGY, WATER, AND CARBON [Register](#)
- October 20: CRACKING THE CODE: UNLOCKING THE BENEFITS OF OFF-SITE CONSTRUCTION [Register](#)

LANL STANDARDS ISSUED IN JULY
Engineering Standards Manual [ESM STD-342-100](#)

ESM-Chapter(s)	Section	Title	Rev.	Date	Comments
Ch. 1 General; Ch. 14 Sustainable Design		Z10 Att E and Ch. 14 References' webpages on life-cycle costing	–		The May 2022 NIST Handbook 135 Life-Cycle Costing Manual for the Federal Energy Management Program & 2022 annual supplement are now available
Ch. 1 General	200	Reference: MEL Change Approval FDAR Delegations	–	7/21/2022	New delegations for ES-UI (UI FOD)
Chapter 2 - Fire Protection; Ch 16 IBC-GEN	D40	Reference: Fire Protection Division of Responsibilities for Construction Inspection	5	7/20/2022	Thanks to Larry Brown, Felix Sandoval, Ch. 2 POC Keenan Dotson et al.
Chapter 16 - IBC Program	IBC-GEN	VAR-10561, Transportainer and ARMAG Installation Requirements	0	7/28/2022	NEW, streamlines requirements. Thanks to Jason Apperson, LBO
Ch. 17, Pressure Safety	QCSM	Quality Control Systems Manual: PS-GEN-NBIC-RSP, R Stamp Program) PS-GEN-NBIC-FIA, Federal Inspection Agency)	2.1	7/21/2022	Minor revisions per NBBI assessment visit. Thanks to Randy Austin (LANL Commissioned Inspector), POC Ari Swartz, Rachel Polski, Christina Salazar-Barnes

Master Spec Sections [STD-342-200](#)

The POCs and Christina Salazar-Barnes (DCRM) continued the update campaign in July. Revisions will continue in weeks ahead, albeit at a slower rate.

Spec Number	Rev.	Spec Title	Effective	Summary
01 4115	1	Pressure Safety Submittals	7/7/2022	Clarified submittals are sent to Divisions 02-48; revised documentation required based on imminent ESM Ch. 17 revision requirements. Thanks to POC Ari Swartz.
02 4115	3	Electrical Demolition	7/19/2022	Added caution on presence of capacitors in electrical equipment (lessons learned from fire alarm strobes), added clarification on role of the NEC in demolition, corrected language. Thanks to POC Eric Stromberg, Jeremiah McRoberts.

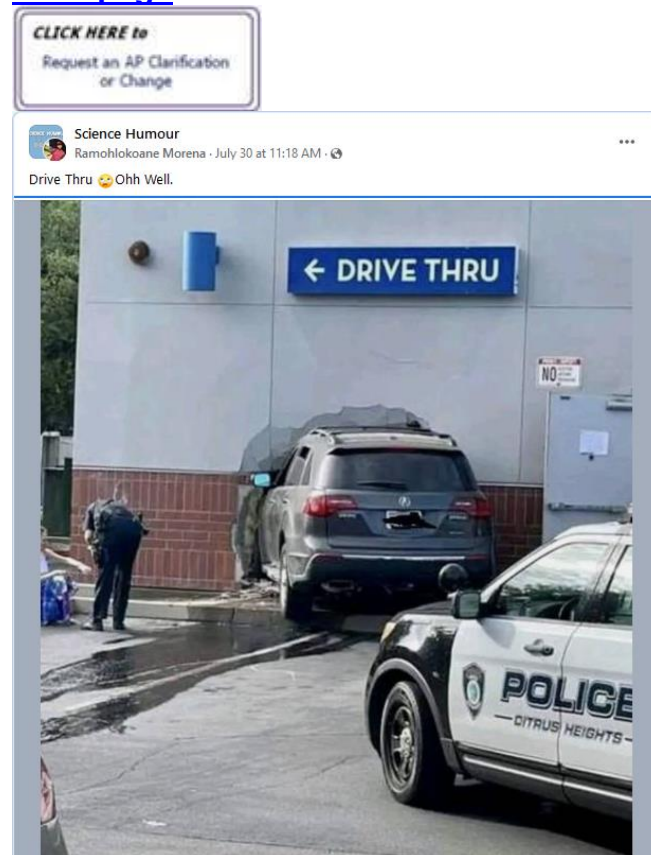
23 2215	3	Steam and Condensate Heating Piping and Specialties	7/11/2022	Deleted reference to B31.1 and referred to 33 6300; expanded applicability to some outside piping. Thanks to Ari Swartz, POC Michael Ladach.
23 2300	5	Refrigerant Piping	7/11/2022	Added option of pressure or vacuum testing per ASHRAE 15 Addendum e 9.13.6.1 (ref VAR-10547). Thanks to Ari Swartz, POC Michael Ladach.
Thanks to POC Eric Stromberg for the rest, except 33 6300:				
26 0533	9	Raceway and Boxes for Electrical Systems	7/19/2022	Minor wording changes, clarification of where to use duct sealant, change RJ45 to 8P8C, clarifications to seismic requirements. Also, thanks to Jeremiah McRoberts, Ian Hoff.
26 0813	3	Electrical Acceptance Testing	7/6/2022	Clarified that Section is almost entirely LANL-performed work. For ML-1/2, allowed for LANL personnel to perform work (1.3.G). For ML-3/4 systems, eliminated testing for grounding and some conductors. For VFDs, increased threshold from 50 to 60 hp. For analytical studies, added notes for who performs and deletion (1.1.B.3, 3.4). Clarification on lightning arresters. Other minor rewording.
26 4100	5	Facility Lightning Protection	7/18/2022	Deleted description/requirements for chemical ground rods, minor wording changes, removed requirement for augered holes with special material backfill, added guidance to delete test wells in most cases.
28 0528	4	Pathways for Electronic Security	7/18/2022	Wording changes from slang to industry standard, gave some options and guidance in the requirements for the bending radius of raceways. Thanks also to Jason Leeches and others in SEC-PSS.
33 6300	5	Steam Energy Distribution	7/13/2022	Updated design temp/pressures, testing requirements (formerly in 22 0813); reference to new Div 01 pressure-related sections; ownership clarification. Thanks to Ari Swartz, POC Jon Stein.
33 7119	6	Electrical Underground Ducts and Manholes	7/14/2022	Corrected reference to Utilities and Infrastructure. Removed requirement for NRTL listing. Removed references to NFPA 70. Removed requirement for underground warning tape. Corrected usage of conductor vs. cable. Also, thanks to Ian Hoff.
33 7311	4	Pad-Mounted Transformer Rough-In	7/14/2022	Options for the grounding electrode have been expanded to reflect NESC requirements. Clarified inspection responsibility. Reduced requirement for grounding electrode conductor from 4/0 to 4 AWG. Other minor changes.
33 7711	4	Pad-Mounted Switch Rough-In	7/14/2022	Removed references to NFPA 70. Removed reference to Spec 26 0526, grounding and bonding.

ENGINEERING PROCESSES NEWS

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

- AP-341-627 Rev. 2, **Design Coordination**: This revision has a requirement for PEs, CSEs, and DEs to attend live briefings through Microsoft Teams. The course is #54166. NOTE: The ERFI is now in this AP.
- AP-341-517 **Design Change Form**, and AP-341-602 **Requirements Criteria Document** are in revision. Please reach out to Sarah Murdock (667-7788) if there are any suggestions or concerns you would like to have addressed in these next revisions.

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

**NATIONAL STANDARDS ACTION**

LANL has IEEE access only through the library's [IEEE Xplore](#).

Document number: [IEEE 519](#), Harmonic Control in Electric Power Systems

Publication Date: 5/13/2022

Type of Change: Complete Revision

LANL's [IHS Eng Workbench](#) (EWB) online codes & standards subscription news:

ICC (I-Codes)

- Newer IECC-2018 errata file posted for hardcopy users posted to ESM Ch 14 References. EWB update to fourth printing has been requested.
- ICC (I-Codes) now has Digital rights management, files “expire” in 60 days and must re-download. ICC and some other orgs require the FileOpen browser plug-in to see pdfs; see

NFPA matters

LANL Notes:

- Required NFPA versions for projects are per ESM Ch 2 Att. A (except NFPA 70/NEC; see Ch 16 IBC-GEN Att. A).
- Errata and Amendments posted (for all codes and standards, must follow such).
- NFPA Access: Users can read online, not download pdfs. This causes an issue with LANL's three NFPA licenses occasionally being tied-up and denying access. Please help alleviate this by logging off when you're not actively using EWB (this goes for all societies). To log off, click your name (upper-right) and log off from drop-down. As another workaround, users can always register on NFPA.org and have read-only there just as they have it on EWB.

Document number: [NFPA 12 AMD 1](#) **Standard on Carbon Dioxide Extinguishing Systems**

Publication Date: **4/15/2021**

Type of Change: **Amendment**

Document number: [NFPA 13 ERTA 3](#) **Standard for the Installation of Sprinkler Systems**

Publication Date: **3/9/2022**

Type of Change: **Errata/Erratum**

Document number: [NFPA 30 AMD 3](#) **Flammable and Combustible Liquids Code**

Publication Date: **8/26/2021**

Type of Change: **Amendment**

Document number: [NFPA 70 AMD 17](#) **National Electrical Code**

Publication Date: **4/12/2022**

Type of Change: **Amendment**

Document number: [NFPA 70 ERTA 5](#) **National Electrical Code**

Publication Date: **4/5/2022**

Type of Change: **Errata/Erratum**

Document number: [NFPA 101 ERTA 1](#), Life Safety Code

Publication Date: 4/15/2021

Type of Change: **Errata/Erratum**

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Because perfection is the enemy of productivity.



Below, poor engineering conduct again. Several times a year, these moisture and density gauges go missing. Hopefully not destined for a dirty bomb.

Nuclear Regulatory Commission - News Release

No: III-22-021 July 13, 2022 Contact: [Viktoria Mitlyng](#), 630-829-9662 [Prema Chandrathil](#), 630-829-9663

NRC Proposes \$8,000 Fine to Alt & Witzig Engineering, Inc.

The Nuclear Regulatory Commission is proposing a \$8,000 fine to Alt & Witzig Engineering, Inc., for violations of NRC requirements involving the loss of a portable nuclear gauge. The company is based in Carmel, Indiana.

The NRC conducted an inspection to review the [event](#) circumstances, the procedures in place at the time, associated documentation and the company's immediate corrective actions. The NRC's preliminary conclusions were detailed in an April 20 [inspection report](#).

After reviewing the company's response to the proposed violations, the NRC concluded that two violations of NRC requirements occurred involving the company's failure to use a minimum of two independent physical barriers to secure a nuclear moisture density gauge on a vehicle when not under the direct control of a company employee; and the failure to lock the gauge when not under the direct surveillance of a company employee.

Alt & Witzig Engineering has 30 days to dispute the fine or request involvement of a neutral third-party mediator to resolve the issues.

The [Notice of Violation](#) to Alt & Witzig Engineering is available on the NRC's [website](#).

LAST MONTH'S UPDATE TOPICS

Miss an issue? The archive is at "Monthly Update" on the Standards homepage. Last month's topics:

- **Training & Qualification -- 24140 Intro to Eng Standards**
- **Engineering Processes News**
- **New ES-EPD Groups: IPD, SPD, and WPD**
- **LANL Standards Issued in June or So**
- **Master Equipment List (MEL) Realignment Milestone Reached**
- **National Standards Action**
- **MSS Document Changes**
- **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.

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