
ENGINEERING STANDARDS UPDATE

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

Topics this month:

- **Concrete Anchors for Nuclear Work—Hilti**
- **UMC and UPC 2015 Adoption**
- **Training & Qual**
- **Nuclear Clause Not Required for Procurements Undergoing CGD**
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- **When Good Conduct of Engineering Isn't Followed**

The LANL Engineering Standards: <http://engstandards.lanl.gov/>

CONCRETE ANCHORS FOR NUCLEAR WORK—HILTI

In June, LANL Building Official Larry Goen issued memos that provide a technical justification to begin the use of Hilti HDA undercut, post-installed concrete anchors in nuclear service, and to discontinue future purchases of Drillo Maxi-Bolts for same purpose. Glen Pappas has drafted ESM Chapter 5 and Spec Section 05 0521 revisions regarding Hilti vice Drillo, and issuance of these is expected later in July. A variance to allow use in the interim may be issued as well. Finally, as a result of the memos and a sound QA program, Jeremy Valentine in QPA added Hilti Austria to the IESL so procurement can begin, assuming appropriate design and specification (Pappas' documents will help immensely with this).

UMC AND UPC 2015 ADOPTION

LANL is moving from the 2012 to the 2015 editions of the IAPMO Uniform Mechanical, Plumbing, and Solar Energy Codes in July. ESM Chapter 16 IBC Program Section IBC-GEN Attachment A, LANL Building Code, is being revised to reflect this. Concurrently, the LANL Research Library's [IHS standards subscription](#) for Labbies will be changed to only offer the 2015s (example search: "IAPMO UMC." For the UMC/UPC, this maintains our alignment with the State of New Mexico; they made the switch in May (for the USEC, they stayed 2012 so now we're planning to allow 2012 or 2015). Since these are mechanical codes, please direct technical questions to Mech POC Michael Ladach, and general-confusion questions to me.

TRAINING & QUAL

Mike Brazile Retiring Aug 30!!!

Mike's been helping Conduct of Engineering since 2004 and has been the indispensable lead training specialist for us and ADE since 2012 when Lyle Kerstiens retired. He did a tremendous amount of work to put the "systems" into the "systematic approach to training" for us and we

certainly wish him well in retirement. There's talk of getting Mike's replacement in place mid-August for turnover; we'll see on that. Regardless, you can always contact his able assistant [Yolanda Trujillo](#) for help with T&Q matters.

Swagelok Course (Non-LANL) July 31 at the Holiday Inn in Los Alamos: 1-day, in-depth and hands-on [Swagelok Essentials Class](#) with half of the day dedicated to Tube Fitting Essentials and the other half to Tube Bending Essentials. For more info, go to the new LANL [Swagelok Resource Center](#).

Electrical Standards – Thurs, Aug 23

Four-hour course 17998 covers the electrical engineering standards in Chapter 7 of the LANL Engineering Standards Manual and discusses mandatory requirements and good practices for those involved in electrical design. Strongly suggested for electrical designers, electrical engineers, electrical safety officers, and facility managers. AEs are also encouraged to attend. Taught by Electrical Standards POC Eric Stromberg from 7:30–11:30 am, at White Rock Training Center TA-00-1308 Rm 112.

Standards Intro Course 24140 – Wed, Aug 29 JUST ADDED!!!

Provides familiarity with national and LANL engineering standards for anyone performing, reviewing, or managing design activities. Required for many LANL engineers, recommended for those at local AE firms. Presented in TA-55-0400 (RLUOB) Room 4503/4, 8 a.m.– 4 p.m., by yours truly. We'll email the slides to print a few days prior.

REGISTERING for UTrain Courses: Go to [UTrain](#). Search on course, assign to yourself, select and enroll. Disenroll if you have to bail. AEs can also register; use CryptoCard or contact Yolanda Trujillo at 665-5696 or yitrujillo@lanl.gov with Z number.

Pressure Safety Officer (PSO) training

Per Ari (Ben) Swartz, POC/CPSO: There are two sessions for both the 52955 “Pressure Safety Officer Overview”, and 53900 “ASME B31.3 Process Piping”. All classes are scheduled at the Canyon Complex, TA00-0199 room 165 or 172, from 8 am to 5 pm.

The 52955 “**Pressure Safety Officer Overview**” classes are **6/19** (past) and **8/7** (room 172). If your certification is for PSO Duty Area A, Curriculum #11957, you only need the 52955 “Pressure Safety Officer Overview” class.

The 53900 “**ASME B31.3 Process Piping**” classes are Tues, **7/10** (room 165) and **8/21** (room 172). If your certification is for PSO Duty Area B, Curriculum #11958, you will need to attend both classes.

You may review the Pressure Safety Officer Qualification Standard, ESD-QS-001,R0 [here](#).

Please determine which class(es) you need, and select the date that is most suited to your schedule. Send me your request and I will place you into the class using an Outlook meeting notice. I will try to accommodate your requests as best as possible, but first come first served so please get your requests in early. Once a class fills up I will automatically schedule a

request for a class that has room remaining. You will receive a meeting notice for a class to confirm that you have been scheduled. **If you do not receive a meeting notice you have not been scheduled!**

NUCLEAR CLAUSE NOT REQUIRED FOR PROCUREMENTS UNDERGOING CGD

Miller Collins in QPA-IQ recently highlighted the policy for procurements undergoing commercial grade dedication. This is based on the April revisions to P840-1 and Exhibit H (allowed for some time before that per Variance QPA-VAR-2017-004.1, now cancelled). The rationale is that, if we’re buying it commercial—and we’re taking all the necessary steps for reasonable assurance of quality—then there’s no reason to spin the supplier up on nuclear quality/liability. (That said, the CGD Technical Evaluation and Acceptance Plan (TEA) may need to be developed and approved before the procurement because there are many instances where inspection, testing, and/or documentation must be specified in the purchase requisition to support the item’s ultimate acceptance.). Anyway, per Miller:

For ML-1 and ML-2 iProcurement POs, P840-1 requirements state that an Exhibit H is required and the Exhibit H provides instructions that if a CGD is being performed, then the Rad/Nuc question on Exhibit H (section IV) should be selected as “No” (and the associated SC-14 rad/nuc clause is not required).

In the case of an ML-1/ML-2 P-Card Exception, where the Vendor doesn’t actually get the completed Exhibit H but instead is provided an Attachment J (that they sign accepting our quality clauses), P840-1 section 3.7.1 provides direction that if a given order includes a CGD, the SC-14 rad/nuc clause language is not required.

Questions to [Miller](#), or maybe the [ES-Div Procurement Eng team](#) (e.g., leader [Marshall Bullock](#)).

ENGINEERING PROCESSES CHANGES

Well, not too much has changed with replacing Fauble. Job ad IRC65860 is still open and accepting resumes. Good opportunity to improve things around here. In fact, Fauble’s work is still working through the pipeline. The following Administrative Procedure has been revised and posted on the [SharePoint site](#):

AP-341-620-R3	Review and Verification of Design Documents [note revised title] Course 44269	Issued: 06/20/18
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The following Administrative Procedure was superseded by the above AP.

AP-341-622-R2	LANL Review of Designs Produced by External Design Agencies	Effective: 6/20/18
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Always ensure you are working to the revision being implemented by your facility or project. For questions about CoE engineering processes, contact CoE Office Director [Rick Hemphill](#) or me. For training questions, contact [Yolanda Trujillo](#) at 665-5696.

LANL STANDARDS ISSUED IN JUNE

ESM STD-342-100	
Ch 7 Electrical , Section D5010 Electrical Service & Distribution	Posted VAR-10258, Concrete encasement of underground low-voltage. Thanks to POC Eric Stromberg.

Master Specifications STD-342-200	
03 3021R2 Reinforced Concrete - High Confidence	Added vapor barriers at 2.6, replaced single-value admix quantities in 4N with ranges using same methodology as AMEC used for 8E; updated both to final TRPIII UPS experience (tables at end of Part 2/Pg 29-30); added isolation joints for slab-on-grade (3.10.D/pg 48-49); addressed early pickup of cylinders (3.15.J). Thanks to POC Glen Pappas.
Technical Evaluation and Acceptance Plan (TEA) for Commercial Grade Dedication (CGD) of Concrete, Rev. 1	Updated mix designs at 6.3 Material Weight to match 03 3021 r2 which included final experience from TRP II UPS. Thanks to POC Glen Pappas.
21 1316R7 Dry-Pipe Sprinkler Systems	Clarified sprinkler head storage (1.6) and painting (3.2.j) consistent with 21 1313; refined pressure gages (2.4-5), other minor changes in some or all. Thanks to SMPO Jim Streit.
21 1319R7 Preaction Sprinkler Systems	
21 1326R7 Deluge Fire-Suppression Sprinkler Systems	
21 1339R7 Foam-Water Systems	
23 2500R3 HVAC Water Treatment	Updated submittal requirements, expanded equipment list for open cooling tower water treatment, added simplified cleaning instructions for minor modifications. Thanks to POC Michael Ladach who says an updated Std Detail is coming very soon, too.

PM PROCEDURE CHANGES

These 350-series APs from PADCAP are applicable to projects subject to [SD350](#), *Project Management for Capital Asset Acquisition and Construction* (e.g., most anything involving capital funding, plus Environmental Programs and also some expense-funded projects over \$50k). Per Crystal Lucero, the APs are in the adpmdocs repository in [EDRMS](#) (like the other PM docs; EDMS is under Top Tools on LANL homepage); if you have access issues, email project-dcrm@lanl.gov.

The following procedure(s) has been revised and issued: AP-350-436, R1, Subcontract Request for Proposal (RFP) Development [~6/11]

DOE TECHNICAL STANDARDS ACTION

STDs [postings](#) in the past month:

DOE-STD-1192-2018, Security Risk Management Technical Standard (SRMTS) (OUO)
[formerly called Vulnerability Assessment]; request from [Val Livesay](#) or norma.uecker@pnl.gov

NATIONAL STANDARDS ACTION

LANL's [IHS](#) subscription reports these changes. Section Z10 says "Errata (correct errors) to any document...are mandatory regardless of contract award date or code of record," so errata apply. Z10 also says use the 2013 edition of NFPA 14 since that's what IBC-2015 references, not the 2016 to which this errata applies.

Document number: NFPA 70E ERTA 1
Publication Date: 5/22/2018
Title: Electrical Safety in the Workplace
Type of Change: Errata/Erratum

Document number: NFPA 14 ERTA 1 [to 2016 Edition]
Publication Date: 5/8/2018
Title: Standard for the Installation of Standpipe and Hose Systems
Type of Change: Errata/Erratum

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Building Collapse Tragedy

Structural collapse with loss of life is tragic, and a large portion of building codes and many standards are devoted to preventing just that. June brought a tragic collapse in Kentucky last month that should not pass unnoticed:



This is at the Barton 1792 Distillery in Kentucky. No one died, but news sources say that crews estimated that the pile contained about 9,000 aging bourbon and brandy barrels, and that roughly a third of those — maybe 3,000 or so — were damaged or open. Tragic! Several hundred fish were killed from the runoff. (Also tragic, but at least they weren't feeling any pain!). [The rest of the warehouse collapsed a few days later.](#)

The warehouse was built in the 1940s and was said to be untreated wood. Insect infestation was mentioned and water damage is always a concern; final report pending, but does seem like they were pushing their luck with this, and there wasn't even an earthquake (this is near the [New Madrid Seismic Zone](#)).

While aging degradation is an issue with both structures and systems (along with technical obsolescence), it's of particular concern in DOE facilities like LANL's—some of which are as old as the Barton warehouse. It's becoming such an issue across the DOE enterprise that a new nuclear maintenance management handbook replacing DOE G 433.1-1A was just proposed.

The article said they did an extent-of-condition review of their other wooden cask rooms and all were fine—a job where inspectors could probably get a contact high from bourbon fumes. And a couple of LANL structural engineers were gone last this week...hmmm...

LAST MONTH'S UPDATE TOPICS

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

- **Having an Issue with a Master Specification? Help is Here**
- **ASME versus NASME Piping**
- **Training & Qual**
- **LANL Standards Issued in May**
- **DOE Technical Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

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