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**ENGINEERING STANDARDS UPDATE**

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

**Topics this month:**

- **Come Work in the CoE Office!**
- **Training & Qualification**
- **Code Adoption Update**
- **LANL Standards Issued in February**
- **David Harvey Becomes Primary NDE “SME Level III” AND “Responsible Level III”**
- **National 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>

**COME WORK IN THE COE OFFICE!**

The Conduct of Engineering Office and ES-FE Group have a number of openings, some recently added! Working in CoE is great opportunity to make improvements that benefit a wide swath of engineering at LANL. Here's a sampling, starting with the Standards positions, of course:

IRC116033 Nuclear Facility Engineer 3/4 – Engineering Standards Expert

IRC118248 Nuclear Facility Engineer 3/4 – Senior Pressure Safety Program Engineer

IRC113986 Quality Engineer 2/3 – IBC Inspector

IRC118339 Quality Engineer 4 – IBC Inspector

**IRC117508** Conduct of Engineering Office Lead (Nuclear Facilities Engineering Manager 3)

**IRC117276** Conduct of Engineering Office Director (Nuclear Facilities Engineering Manager 4)



## TRAINING & QUALIFICATION

### Admin Stuff

**New E-mail for COE Qual Program: [COEQuals@lanl.gov](mailto:COEQuals@lanl.gov)**

Use the addy linked above 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). The email goes to the whole team: Deb Cushner, Jess Blea, and Barb Dela Cruz.

Conversely, for help with essentially training (but not qual) issues, contact Nick Jones ([n.jones@lanl.gov](mailto:n.jones@lanl.gov)) or Sadonna Tapia ([squires@lanl.gov](mailto:squires@lanl.gov)).

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**Instructor-Led Course Request/Registration Guide (NEW-ISH)**

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 (MS Teams)**

**Intro to LANL Engineering Standards, 24140 – March 13-16 (M-Tr, must attend all 4 days), 2:00-4:00 PM (NEW TIME)**

**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 Nick Jones ([n.jones@lanl.gov](mailto:n.jones@lanl.gov)) or Sadonna Tapia ([squires@lanl.gov](mailto:squires@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.

**COE Configuration Management Overview, 55231, 9-10 AM, 3/2, 3/16, 3/30, 4/13**

An introduction to the LANL Conduct of Engineering mission and the description, 09:00 AM - 10:00 AM. POC: Sarah Murdock.

**Safety Basis for Engineers, Course 39564, Tuesday, March 21, 1:00 – 3:30 pm**

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. To sign up, please go into UTrain and search for course #39564. Find the session and you can register for it there. UTrain will provide you the Teams link or it will be emailed before class. PLEASE DO NOT SIGN UP TO COURSE WITHOUT REGISTERING WITHIN UTRAIN! You will not be granted credit unless you have registered in UTrain. Heath Mclaughlin will be the primary instructor and Aaron Carr will be the backup. If you have any questions regarding this training, please reach out to them. <[heathm@lanl.gov](mailto:heathm@lanl.gov)>; <[acarr4@lanl.gov](mailto:acarr4@lanl.gov)>;

**P841-1, Quality Procurements Briefings, 2-3 pm, Mar 21, Apr 18, May 23**

P841-1, *Quality Procurements* will become effective on April 25, 2023. 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 one of these upcoming virtual brown bags.

**Meeting dates/times:** March 21, 2-3pm; April 18, 2-3pm; May 23, 2-3pm

### Meeting 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#



### **IHS Engineering Workbench Overview Training Online, Thursday, March 23, from 1-2 PM Mountain Time**

S&P Global, formally known as IHS Markit, is hosting a [live online training session](#) for all LANL colleagues to maximize your awareness and use of the IHS Engineering Workbench platform, where you can access online documents for your projects. By attending this training session, you will be able to have a quick understanding of how to access IHS Engineering Workbench, how to efficiently search for documents you need, and how to interpret results in your subscription.

The training will cover the following topics:

- Login and registration for individual accounts
- Introduction to the Laboratory's one stop solution for accessing technical reference content
- Working smarter by using such system capabilities as annotations, watch lists, semantic search, and the Research Assistant
- How to use alerts to be up to date on the latest versions of specific standards
- Understanding copyright terms and conditions on downloadable documents
- How to use the system to store documents for offline use in browser formats

The live session will include time for questions. Users with all levels of knowledge are welcome to attend. Those who cannot attend at the time of the event will be sent a link to the

recording. [Register here](#). [if it fails, right-click and copy URL, paste into Edge browser -- or possibly clear Firefox cache]

Info above provided by Sarah Lynn Hayes, Engineering Librarian, SRO-RL: Research Library, *pronouns*: she/her, they/them (["what is non-binary?"](#)) [slhayes@lanl.gov](mailto:slhayes@lanl.gov)

### **Pressure Safety Courses (March and beyond)**

There are three different courses that repeat each quarter this year. If a person wants to take a class without becoming qualified that is fine, just register in UTrain (Teams meeting notice for the class dates and times is sent later). The POC is Ari (Ben) Swartz, Chief Pressure Safety Officer.

FYI, the process for a PSO qualification is:

1. RLM requests assignment of curriculum
2. Training coordinator assigns curriculum to candidate
3. Candidate registers for a class offering on UTrain

The schedule for this quarter is below (may be adjusted):

<b>Utrain</b>	<b>Title</b>	<b>Dates (partial days)</b>
COURSE 56239	B31.9, Building Services Piping	3/13 - 3/20
COURSE 52955	PSO Overview	4/3 - 4/17
COURSE 53900	B31.3, Process Piping	5/15 - 5/24

Pressure regulators: If you're into these, Swagelok offers a 2-part course on their regulators that has somewhat broader value on the topic:

<https://www.bigmarker.com/swagelok-southwest/Pressure-Regulators-Part-1-Operating-Principles-and-Selection-Considerations>

[https://www.bigmarker.com/swagelok-southwest/Pressure-Regulators-Part-2-Troubleshooting-and-Sizing?bmid=77e1ccee4e46&source\\_from=invitation](https://www.bigmarker.com/swagelok-southwest/Pressure-Regulators-Part-2-Troubleshooting-and-Sizing?bmid=77e1ccee4e46&source_from=invitation)



Prices are dropping like eggs through a cloaca so running this meme was now or never.

### CODE ADOPTION UPDATE; IHS NOW HAS THEM



We're super-close with the ESM revisions needed to adopt three 2021 International Codes and the 2020 NEC, almost certainly within a couple of weeks. ESM Chapters 2, 5, and 16 are affected.

To support this, all of the 2021 ICC codes (I-Codes) are now available to all users in IHS Engineering Workbench. Also, for the first time, we have subscribed to the commentary version of them instead of the code-only versions so everyone can benefit from the additional guidance those offer.

Link: [Online National Codes & Standards](#) Fastest search is with acro and year in the search field, like "IBC 2021," or search for the bare acronym and set the Issue Date to 2021 in the filters. Note: The IBC is in two volumes and you'll probably want both.

Please log out by clicking your name to see the drop-down shown below when you've downloaded what you want.



Note: LANL uses the 2018 version of the Int'l Energy Conservation Code (IECC) for very small modifications per ESM Ch. 14, so we get that, too.  
We also get the 2021 IAPMO UMC and UPC for mechanical and plumbing.

**NFPA 70-2020 NEC access (correction to last month's message):** Like all NFPA, read-only. On IHS, search for NFPA 70 and set issued date to 2020. The top hit is what you want, says this (and direct link is): [National Electrical Code - Effective Date: 8/25/2019; Incorporated Amendments 1-17 Dated 4/12/2022; Errata 1-5 Dated 4/5/2022; TIA Changes](#). We get past editions of NFPA standards, also those of some other developers.

**Training:** See above for how to join the March 23 IHS Engineering Workbench Overview Training.



Spy balloon? No, bird poo on the windshield. Cloacas again.

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

ESM Chapter(s)	Vol/Section	Title	Rev.	Date	Comments
Chapter 13- Welding	Vol. 6 NDE	ITM-1306-NDE-UT-501, PAUT of Hemispherical Vessels per ASME BPVC Code, Section VIII, Division 3	1	2/9/2023	Thanks to POC David Harvey.
Chapter 13- Welding	Vol. 6 NDE	ITM-1306-NDE-GUIDE-500-MX3, PAUT Examination Checklist - MX3	0	2/9/2023	Thanks to POC David Harvey.
Chapter 16 - IBC Program	Reference	Listing of LBO-Approved IBC Testing, NDE, and Inspection Agencies; Fabricators; and Products	-	2/8/2023	Thanks to LBO Chief Inspector Robert Abeyta.

**DAVID HARVEY BECOMES PRIMARY NDE “SME LEVEL III” AND “RESPONSIBLE LEVEL III”**

Speaking of NDE, David, having passed examinations in February, now holds ASNT Level III Certifications in the following NDE methods:

- Eddy Current (ET)
- Magnetic Particle Testing (MT)
- Penetrant Testing (PT)
- Radiographic Testing (RT)
- Ultrasonic Testing (UT)
- Visual Testing (VT)

As such, David is now both the Responsible Level III (oversees the NDE part of ESM Ch. 13 - LANL Welding, Joining, & NDE Volume 6) and, for these techniques, the SME Level III (responsible for method-specific procedures used to perform NDE examinations).

The examinations were proctored and graded by Kelly Bingham on Feb. 6th & 7th. Many, many thanks to Kelly, who subsequently retired last month. Kelly was the first Welding Standards POC and drove creation of the original ESM Ch. 13 program back in 2006 (no sitewide program existed before that point). “Ah, good times...back in the day...,” he said, wooden dentures clicking...



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**NATIONAL STANDARDS ACTION**

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

Training: See above for how to join the March 23 IHS Engineering Workbench Overview Training.

2021 I-Codes, 2020 NEC: See above article above on code adoptions regarding availability.

**Document number: 2021 I-Code Interpretations**

Since the 2021s were issued a couple of years ago, the ICC has issued dozens of formal interpretations and this is a compilation of those through June 2022. Now that we have this doc we can also refer to it when we encounter issues for which the commentary doesn't satisfy. And when we find something relevant, it's to be considered binding per ESM Ch. 1 Section Z10 direction: "Interpretations shall be utilized as if written in the ESM/code/standard itself...Either from issuing org or LANL. Users are not expected to locate and manage all such interpretations; however, they must follow same for any for which they become aware."

**Document number: ACI 318, Building Code Requirements for Structural Concrete (ACI 318-19) Commentary on Building Code Requirements for Structural Concrete (ACI 318R-19)**

Publication Date: **June 2019**

Reaffirmed/Reapproved Date: **(R 2022)**

Type of Change: **Errata/Erratum. NOTE:** We don't use the 2022 edition but errata relevant to the 2019 that we'll use with IBC-2021 are required.

**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-CE has issued the below document(s):

**O&M 430: Oxygen Deficiency Monitor Systems**

- Initial Issue. First publication detailing requirements and recommendations for maintenance and operations of oxygen monitors. Requirements and recommendations are based on codes, standards and industry expert recommendations.

ALSO – Initial issuance of all these **PMIs**:

PMI 430-A: Alpha Omega Series 1000 - Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

PMI 430-B: Advanced Micro Instruments (AMI) Model 221R - Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

PMI 430-C: PureAire Models D, DR, DRA, and Air Liquide Model O2000 - Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

PMI 430-D: Alpha Omega Series 2000 Percent Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

PMI 430-E: RKI OX-600 Indoor Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

PMI 430-F: Alpha Omega 1300 Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

PMI 430-G: Other (Out of the Recommended List) Oxygen Deficiency Monitor Systems Inspection, Testing, and Calibration

**WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED**

Last balloon-shooting meme, I promise.



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**LAST MONTH'S UPDATE TOPICS**

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

- **Training & Qualification**
- **Engineers Week (LANL: Feb 22-23)**
- **"Inside ALDICP" Newsletter**
- **Code Adoption Update**
- **LANL Standards Issued in January**
- **Emerson Fisher Regulator 627 Product Safety Notice**
- **National Standards Action**
- **DOE Standards Action**
- **MSS Document Action**
- **When Good Conduct of Engineering Isn't Followed**

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(With the support of many others in the CoE Office. Contacts for them: [Engineering Services Conduct of Engineering \(lanl.gov\)](#) )