

ENGINEERING STANDARDS UPDATE

Standards are serious business, but this newsletter isn't.

Topics this month:

- **Training & Qualification**
- **Engineering Processes News**
- **LANL Standards Issued in October**
- **DOE Technical Standards Action**
- **MSS Document Changes**
- **When Good Conduct of Engineering Isn't Followed**

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

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

Fitness coach: have you ever done a marathon?

Me:

**TRAINING & QUALIFICATION****T&Q suggestions and questions tool—NEW!!!!**

LANL customers of CoE T&Q matters can make suggestions and even get clarification on things like qual standards and courses. This is done via an online SharePoint form just as CoE has had for APs and Standards for a while. Go to Conduct of Engineering Training & Qualification (int.lanl.gov) to see it. Under Mentoring Resources (upper-right) select Training & Qualification Clarification. You'll see the Training & Qualification Clarification form there. Thanks to Jessica Blea and others!

Credit for Time Served—Sept Building Code Courses

UTrain credit has been given and certificates emailed for all of them now. If you have not received an email for a course that you attended and really want it, please contact oruch@lanl.gov and we'll work through the issue.

ASME B31.3 Process Piping Code (UTrain 53900) Nov 15-18, 22/23, and 29/30

Ari Swartz is presenting a WebEx training class in November. It's 1:00 PM to 2:00 PM (1 hour daily for total of 8 hours) starting Monday 11/15 and through Thurs 11/18 that week, continuing on Monday and Tuesday 11/22 and 23, and finally M/T 11/29 and 11/30 (4+2+2=8). This is a required course to be a Pressure Safety Officer but available to anyone interested in the design of pressure systems (most material applies to all

pipng systems). To register for the class please email (abswartz@lanl.gov) and he'll add you to the Webex invitation.

ESM Chapter 21 Software -- Overview and Owners Courses – Dec 7 +/- Dec 9

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). Most people in that situation are or soon will be subject to ESM Chapter 21 Software and need to take required training on the chapter. So...if you, in fact, need live training, please enroll for the course(s) below. If you're not sure what you need, contact me (5-8475) or SME/instructor Joy Getha, 5-9586, jlgetha@lanl.gov. **Next offering will be many months from now so don't miss this chance if you need this.**

- 38047 ESM Chapter 21 Software Overview Course Tues 12/7, 9-12:00. (RLMs and Owners)
- 34048 ESM Chapter 21 Software Owner's Course Thurs 12/9, 9-12:00 (just Owners return for this).

Safety Basis for Engineers, Course 39564, Wed, Dec 8, 9-11:30, Webex

Registrants will receive Webex instructions prior to start. POC: Joy Getha, 5-9586, jlgetha@lanl.gov. Has lots of TA55 examples but is generally applicable to any nuclear facility.

Engineering Standards Intro (UTrain 24140) Dec 13-16 (M-Tr) Webex with Tobin

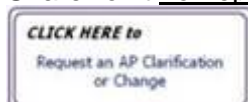
Oruch each day from 10:00-noon (total of 8 hours). You must attend each day to receive UTrain credit.

This spellbinding and wildly popular (since required) course is humbly taught and 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 couple of times a year--so thanks for your patience waiting and hope most can attend.**

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 guy Stan Hayes (sehaves@lanl.gov) with Z number. Webex format registrants will receive instructions prior to start.

ENGINEERING PROCESSES NEWS


CoE Eng Process Manager Sarah Murdock has a new email addy: smurdock@lanl.gov. But...usually best to 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](#).



LANL STANDARDS ISSUED IN OCTOBER
Engineering Standards Manual ESM STD-342-100


Chapter	Section	Title	Date	Comments
ESM Ch. 16 IBC Program	References	ARMAG robust structure summary of LANL requirements and guidance (LANL only), R0 NEW	10/4/2021	Thanks to Logan Tietjen, Amy Gitnick, and others
ESM Ch. 17 Pressure Safety	ADMIN-4 References	ASME-B31.5 Refrigeration Piping Test Plan Template and ASME-B31.5 Specific Leak Testing Data Sheet NEW	10/19/2021	Thanks to Tim Donovan, POC Ari Swartz, Brenda Mota

The below is from a Policy Office newsletter. If you like it you might consider applying for the Engineering Standards (Engineer 3) Job IRC85997 since it's helpful to be a tech writing geek (ref July Update: <https://engstandards.lanl.gov/updates.shtml>)



Policy Corner: Tips from the Groovy Grammar Guru - **Math Errors in Technical Writing**


Do you think that a tripling of gas prices is a 300 percent increase?
Or what about this one: The first test blast was 20 kilotons. The second was 100 kilotons, five times more powerful than the first. Sounds correct, doesn't it? But, no.



These are but two examples of common errors, often brought upon, it would seem, by logic. But in reality, it just don't add up!

For example:

- A doubling of gas prices is a 100% increase. Ergo, a tripling is a 200% increase.
- 100 kilotons is five times as powerful as 20 kilotons, not five times more powerful. Meaning, that it's only four times more powerful.
 - Because one time as powerful = no times more powerful. Twice as powerful = one time more powerful. And so on.

 You can find 1000 times (or so) more information on this subject on the WWW or in *Mathsemantics: Making Numbers Talk Sense* by Edward MacNeal.

DOE TECHNICAL STANDARDS ACTION

Tech Stds Program postings in the past month:

DOE-STD-8000-2021 Safety System Oversight-Final (2).pdf, Safety System Oversight Functional Area Qualification Standard [used only by Feds]

The SSO FAQs establishes common performance competencies for DOE personnel who perform SSO duties and responsibilities. SSO personnel oversee contractor management of safety systems at DOE defense nuclear facilities and are responsible for overseeing assigned systems to ensure they will perform as required by the safety basis and other applicable requirements. Appendix C, Approaches for Deploying and Qualifying SSO Personnel, outlines the different approaches for assigning personnel to provide oversight of safety systems and the qualification expectations for each of these approaches.

MSS DOCUMENT CHANGES

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

O&M Criterion/PMI Changes

Operation and Maintenance Criterion and related Preventative Maintenance Instruction (PMI) are standards about which system 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.

If you have issues on the SharePoint site use Internet Explorer to access them. Access to all such documents when no direct link is shown

below: <https://logistics.lanl.gov/MSS/layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx>

Circa Nov 1:

O&M 735 Rev5: Wet Standpipe Systems

- Updated O&M to comply with the 2020 version of NFPA 25 and the 2019 version of NFPA 14, to include frequency changes in alignment with the Equivalency Approval to DOE O 420.1C Chg. 3
- Updated to fix findings from the 2019 Fire Protection ITM Self Inspection.
- Updated references, codes, and standards
- O&M Criterion template update
- Changed scope: this criterion does NOT address maintenance requirements for reduced pressure backflow prevention devices.
- Clarified definitions of Class I, II, and III Standpipe Systems.
- Changed FP-DO to ES-FP throughout.
- Added requirements for impairments and modifications; graded approach and equivalencies; nuclear, high-hazard non-nuclear, and “high value” facilities; and balance of plant facilities.
- Clarified baseline operational requirements.
- Added Table 6-2: Inspection, Testing, and Maintenance Frequencies.

- Clarified daily, weekly, monthly, quarterly, semi-annual, annual, and five-year maintenance requirements.
- Updated Attachment 1: Summary of Component Action Requirements.

Direct: https://logistics.lanl.gov/MSS/_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/735.pdf&action=default

O&M 736 Rev4: Dry Standpipe Systems

- Updated O&M to comply with the 2020 version of NFPA 25 and the 2019 version of NFPA 14, to include frequency changes in alignment with the Equivalency Approval to DOE O 420.1C Chg. 3
- Updated to fix findings from the 2019 Fire Protection ITM Self Inspection.
- Updated references, codes, and standards
- O&M Criterion template update
- Changed scope: this criterion does NOT address maintenance requirements for reduced pressure backflow prevention devices.
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WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Lacking a good example of poor CoE I'm going with poor engineer conduct.

Engineers on a train

(from <https://interestingengineering.com/25-best-engineering-jokes-make-your-day-better>)



Source: [Donnie Nunley/Flickr](#)

Three engineers and three mathematicians are on a train going to a conference. The mathematicians each bought a ticket. The engineers have one between them. As the conductor starts walking through the train car, the engineers all rush off and jump into the small lavatory.

The conductor knocks on the door of the lavatory and says, "Ticket, please."

At which point the engineers slide the one ticket through a ventilation slot and the conductor punches it. The mathematicians think this looks like a good trick and decide to try it on the train ride back home.

As the mathematicians board the train they have one ticket between them. The engineers have no ticket!

After a while, one of the engineers says, "Here comes the conductor!" So all three mathematicians jump up and run into the lavatory with their one ticket.

One of the engineers goes to the lavatory door and says, "Ticket, please."

Source: [u/fizznick/Reddit](#) [although the joke's been around ages]

LAST MONTH'S UPDATE TOPICS

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

- **ES Reorg**
- **Training & Qualification-- Building Code Training Last Month**
- **Data Call for National Standards Committee Work**
- **Fire Prevention Week**
- **Engineering Processes News**
- **LANL Standards Issued in September**
- **DOE Technical Standards Action**
- **Pressure Safety Committee; Upcoming Leadership Change**
- **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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