B ENGINEERING STANDARDS UPDATE

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

Topics this month:

- **New Institutional Facilities FOD Splitting from Utilities and Institutional FOD April 5; Kevin O'Donnell to lead ES-UI**
- **Training & Qualification**
- **LANL Standards Issued in March**
- **Engineering Processes News**
- **O&M Criterion Changes**
- **DOE Technical Standards Action**
- **National Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

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

Note: This newsletter has hyperlinks all over but the blue/underlined formatting may not show. Hover your cursor where you might expect one.

Happy April Fools' Day!
One source for trending jokes: https://www.cnet.com/news/april-fools-day-2021-duolingo-toilet-paper-velveeta-skincare-and-more-pranks/

Even this was in doubt when people starting hoarding again due to the Suez Canal blockage.

NEW INSTITUTIONAL FACILITIES FOD SPLITTING FROM UTILITIES AND INSTITUTIONAL FOD APRIL 5; KEVIN O'DONNELL TO LEAD ES-UI

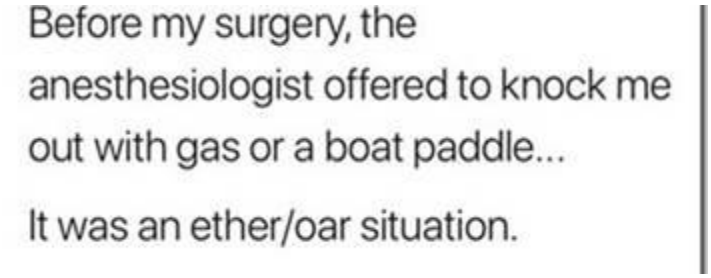
Excerpt from a March 24, 2021 email from Bret Simpkins, "ALDFO Announces Restructuring to Improve Customer Service":

> A new **Institutional Facilities** FOD will be established to manage the facility portfolio currently under the Utilities and Institutional Facilities FOD. This will allow the **Utilities and Infrastructure** FOD to focus on managing the utility services, transportation improvements and sustainment needed for mission growth. The new Institutional

Facilities FOD will be better positioned through reduced management span of control to focus on the building upgrades and improve service delivery for tenants. Lawrence Chavez will serve as the acting Institutional Facilities FOD while we conduct a search for a permanent candidate.

In related news drawn from a Jason Apperson, ES-DO email:
As of March 29, Kevin O'Donnell has accepted the Utilities and Institutional Facilities Engineering Group Leader position (ES-UI). Mr. O'Donnell has broad working experience with utility infrastructure design and operations. Prior to accepting his position with LANL, he worked with Bechtel, and most recently overseas in Saudi Arabia serving as an Area Engineering Manager in Jubail for the City's Utility Infrastructure. His experience will serve both the ES Division and UI Organization well.

Jason added that Kevin and John O'Brien will be managing engineering for both the IF and UI FODs. Welcome, Kevin!



TRAINING & QUALIFICATION
Engineering Standards (UTrain 24140) April 26-29 (M-Tr) Webex with Tobin Oruch each day from 10:00-noon (total of 7-8 hours). You must attend each day to receive UTrain credit. This course 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. Only about 6 slots left; if you can't get in, self-assign and request class to join waitlist, or failing that, email yjtrujillo@lanl.gov with Z number.

Electrical Standards – Tues, May 4, 8:00-noon, Webex
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 participate. Taught by Electrical Standards POC Eric Stromberg via Webex. Register in UTrain then join: https://lanl-us.webex.com/lanl-us/j.php?MTID=m13206c2324282f7b275087253cd6ee45

Registering for UTrain Courses: Go to UTrain, search on course, select and enroll. Disenroll if you have to bail. AEs can also register; use token (CryptoCard) or contact ES T&Q coordinator Yolanda Trujillo at 664-0118 or yjtrujillo@lanl.gov with Z number. Registrants will receive Webex instructions prior to start.

And now a word from our sponsor:

Swagelok® Tech Talk Live Webinar – 4.8.2021
Safe Hose Selection Part 2: Application Considerations Starting 10:00 AM Arizona-Pacific | 11:00 AM New Mexico/Mountain **Course length:** 30 minutes LEARN MORE

Kidding…and I normally don't endorse a non-LANL course but it's free, short, and promotes pressure safety (next Thurs). The ESM's pressure safety chapter even deals with this topic in Attachment ASME-4-2, Swagelok Flex Hoses.

Attend this session to grow your expertise in the hose selection process. We discuss specific application challenges for hose and how to overcome them. **Who should attend?** Those involved with gas and fluid system installation and maintenance including Technicians, Engineers, Procurement and QA/QC. Questions? Email karen.polen@swagelok.com. If you previously attended Safe Hose Selection Part 2 in May 2020, please share this with your colleagues if appropriate…snip

LANL STANDARDS ISSUED IN MARCH

The **big news** is the revision of the majority of the Structural Chapter of the ESM. Specifically, because of a fairly significant reduction in the Lab's seismic hazard numbers, certain commercial-type buildings designed to Section II will qualify for use of Seismic Design Category C (provided several provisions are met) rather than the more-demanding SDC D. Furthermore, a new companion reference for Section II compiles the requirements differences between SDC-C and the default SDC-D in the IBC and its invoked standards; the reference also serves as a guide to engineers who need to modify LANL Master Spec sections and Std Details for SDC-C use prior to LANL revising same (these revisions from POC Glen Pappas expected in coming days and weeks).

Engineering Standards Manual ESM STD-342-100

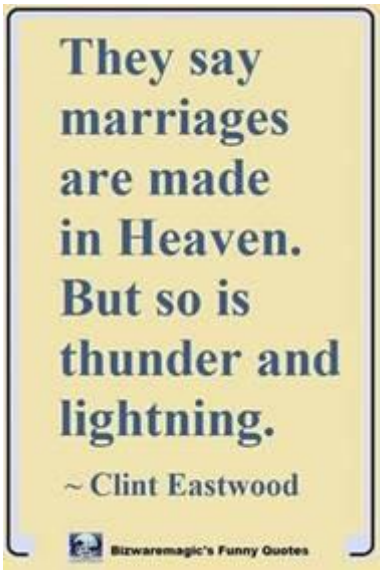
Chapter	Title	Rev.	Date	Summary
2 – Fire	Reference: LANL preferred design division of responsibility	NEW		SFPE/NSPE/NICET position. Thanks to POC Keenan Dotson et al.
Chs 5 and 16 changes thanks to author Glen Pappas, Mike Denlinger, Ch 5 POC Mike Salmon:				
5 – Structural	Section I, General Criteria	8	3/24/2021	Adopted DOE-STD-1020-2016 and DOE O 420.1C Chg 3; other minor clarifications and additions. Many basis footnotes moved to requirements ID document.
	Section II, Commercial Design and Analysis Requirements	11		Adopted DOE O 420.1C Chg 3, DOE-STD-1020-2016…Added 1.1.A to include guidance on mech & elec items outside IBC scope, added 1.4 for flood hazard; and edited 1.6 to reduce seismic hazard per updated PHSA (IM 2018-0495 CA 2) and add SDC C pathway; added A.12 to include requirement for f'c for design of anchorage of nonstructural components to nonstructural concrete, A.13 to clarify adhesive-anchor drawing requirements, and A.14 content on CIP masonry anchorage…
	Section II Reference: IBC SDC C versus D – Effect on LANL Design	NEW		A companion to ESM Chapter 5 Section II (Rev. 11) to guide EOR implementation of its new provisions for use of SDC C for certain RC I and II structures.
	Section III, Nuclear SSCs Design and Analysis Requirements	9		Incorporated DOE O 420.1C Chg 3, DOE-STD-1020-2016, and ASCE 4-16 and ASCE 43-19 (adding App F); new App G for programmatic restraint…
	Reference: Requirements ID Log	NEW		Provides bases for requirements in Sections I-III (e.g., 5-0XXX; xls; LANL only)

14 – Sustainable Design	Reference: RFP Language for Project Engineers (LANL only)	NEW	12/11/2020	This document is provided to ease implementation of the LANL Sustainable Design requirements for New Construction and the Guiding Principles for Sustainable Federal Buildings. Sustainable design requirements stem from DOE Orders 436.1, 413.3, 430.1C, federal regulations 10 CFR 433 and 10 CFR 436, and consensus standards such as ASHRAE 90.1. Thanks to Dee Bangert, UI.
16 – IBC Program	IBC-GEN, Att. B: LANL Existing Building/System Code (LEBC)	9	3/24/2021	Section 301.1 updated for new seismic spectra and SDC C allowance in ESM Ch 5 Sect. II r11. Thanks to author Glen Pappas.
Ch. 17 changes thanks to POC Ari Ben Swartz:				
17 – Pressure Safety	NASME Reference: Reputable manufacturers	–	3/29/2021	When listed components cannot be used, reputable manufacturers as discussed in NASME-1-a, b, etc. (xls) (LANL only)
	ADMIN-2 Reference: Allowed Unlisted Components Listing	–	3/24/2021	Per ADMIN-2, Article Z
	ADMIN-3-FM01, Relief Device Procurement Pre-approval	3	3/31/2021	Updated approval requirements per ASM Form 410 Goods-Services-Requiring-Special-Review (reference doc) approver categories for regulators & PRVs; ASME vessels; and steam and boiler
	ADMIN-3-FM02, ASME Vessel Pre-approval	1		
	ADMIN-3-FM03, Steam and Boiler Relief Device Procurement Pre-approval	2		

Master Specs STD-342-200

Thanks to Mechanical Stds POC Michael Ladach on most all these, CPSO Ari Swartz on some, and other SMEs as noted!

Spec Number	Rev.	Spec Title	Effective	Summary of Latest Revision
22 0813	9	Testing Piping Systems	3/17/2021	Updated to address IM 2020-0963 issues #3 and #4. Provided edits for clarity. Removed test pressure data and test duration data that has been listed in other specification sections
22 1413	3	Facility Storm Drainage Piping	3/11/2021	Updated Submittals. General edits for clarity. Added testing requirements for pressures and durations
22 3700	2	Domestic Water Heaters	3/11/2021	Updated Submittals, general edits for clarity, removed information relating to water heaters subject to ASME B&PVC, Section IV, Part HLW.
22 4200	7	Plumbing Fixtures	3/16/2021	General updates for clarity and model numbers
23 1123	4	Facility Natural-Gas Piping	3/11/2021	Updated submittals related to welding of pipe. Added testing requirements for pressures and durations
33 5100	10	Natural-Gas Distribution	3/24/2021	Added ASME B31.8 weld inspection requirements. Added the LANL ESM WPS numbers for steel and HDPE. Added part numbers for all specified components. Added the specific pressure testing requirements for the natural gas system. Updated parts list to include: Mechanical fittings; Nuts, Bolt & Washers; Weld-o-let branch connections; Test lead stations; Carrier pipe spacers and seals. Thanks also to SME Misha Gallegos.



EARTH WEEK 2021
From Katie Rodarte, LANL Earth Week Coordinator (expect more details in next Monday's LANLToday):

Earth Week Art and Photography Contests

Earth Week is coming soon! April 22 marks the 51st anniversary for when "Earth Day" first began. This year, Los Alamos National Laboratory will celebrate the environment in a week filled with fun activities and virtual learning experiences. To kick off the Earth Week celebration, the Laboratory will host art and photo contests that are open to New Mexico schools, surrounding communities, and Laboratory employees.

Shutter bugs and artists encouraged to enter
Photographers are encouraged to submit photos to represent how their lives have become more "Earthy" over the last year. Artists are asked to draw, paint, collage or use recycled materials to represent "What Earth Day means to you." To enter the contests, submit an image of your art and/or photo and provide a short caption to describe your work.

Submission deadline is Wednesday, April 14.

The contest has two categories for entrants: children under 18 and adults. Guardian or Parental Consent is required for participants under the age of 18. Only the first name of the participant will be listed on the Earth Week website.

Judging
Entries will be featured on the Los Alamos National Laboratory Earth Week website and will be voted on by the site visitors. Winners will be selected from each age group and have their art and/or photo featured on the Los Alamos National Laboratory website. The winning entries will be announced the week of April 26th.

CLICK HERE to enter the contests. All creativity is welcome!

ENGINEERING PROCESSES NEWS
Per CoE Eng Processes Manager is Sarah Murdock, 667-7788, sterrill@lanl.gov:

The following Administrative Procedures have been revised and posted to the COE Administrative Procedures SharePoint site. Always ensure you are working to the latest version of all Engineering Administrative Procedures adopted at your location.

AP-341-720 R0, Engineering Construction Submittals NEW!!!	Issued 2/17/2021 Effective 3/19/2021	Training Course 51676 has been assigned in UTrain for those that were identified as requiring it.	Topic was previously under PM and transferred to CoE

If you have been identified as requiring additional training on an AP you will see an assignment on your UTrain "to do" list.

More updates

- LANL is phasing out the use of DRS, so moving forward we will be transitioning to a new document review software application called "Aproove" that is being launched by the Service Innovation - Document Control and Records Management (SI-DCRM) group. Our first COE procedure review using the Aproove tool will be assigned in the next few weeks, and ES will implement the Aproove application for design reviews within the next few months.
- AP-341-704 *Item/Service Quality Verification* is a new AP that has been created by a working group to address item verification process for QRL-2 procurements. This AP is aiming to be approved in time for the next revision of P840-1 *Quality Assurance for Procurements*.
- The FY 2021 Annual AP Priority List is posted to the COE AP site if you would like to see the revisions being worked this year.

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.

O&M CRITERION CHANGES

Operation and Maintenance Criterion and related Preventative Maintenance Instruction (PMI) are standards about which system engineers should be familiar. Blow are recent changes issued by MSS-MP, the Maintenance Programs Group of Maintenance and Site Services Division, per Jeremy vonHarders. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities. Questions? Contact the document author.

Use Internet Explorer to access them on the SharePoint site if you have issues. 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

Issued around March 3: **O&M 424 Cooling Towers**

- Updated acronyms, definitions, references, and template text
- Removed Repair Lockout from Precautions
- Added Daily Operational Checklist to Section 6.1 Ops Rqmnts
- Added Post-Maintenance Testing Checklist to Section 6.2 Maint Rqmts
- Moved Weekly ITM from Recommendations to Requirements
- Moved Six-Month ITM from Recommendations to Requirements
- Moved Yearly ITM from Recommendations to Requirements
- Added Plume Abatement to Section 7.2 Maint Recommendations

You can access this document by clicking here: https://logistics.lanl.gov/MSS/_layouts/15/WopiFrame2.aspx?sourcedoc=/MSS/Policy%20%20Procedures/424.pdf&action=default

DOE TECHNICAL STANDARDS ACTION

Tech Stds Program postings in the past month:

DOE-HDBK-1240-2021, Institutional Controls Implementation Handbook for Use with Use of Institutional Controls

This Handbook provides information to assist Department of Energy (DOE) program and field offices in understanding what is necessary and acceptable for implementing the provisions of DOE Policy (P) 454.1, Use of Institutional Controls. It identifies issues that need to be addressed when considering the use of institutional controls to support DOE's diverse missions. Neither this Handbook nor the Policy include requirements, rather the Policy establishes the Department's commitment to using institutional controls effectively to meet requirements contained in other directives or regulations. For example, DOE P 454.1 helps ensure that institutional controls will be integrated into the DOE Order (O) 436.1, Departmental Sustainability, environmental management system (EMS) implementation framework to help protect the public and the environment.

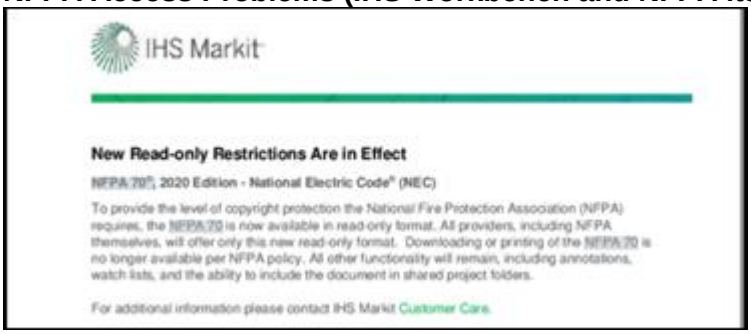
This one's a yawner, take my word for it.

NATIONAL STANDARDS ACTION

ASME Code Archives

Most Labbies should be using the latest editions available from **IHS Eng Workbench** but detailed code of record questions can arise. Randy Austin in ES-FE/MSS-MP (last month's NBBI Lifetime Member honoree article) notes that NBBI has a majority of the old ASME Code pages and their permission to reprint. The cost is $27 for the first page, $1.50 each additional page, and a $3 handling fee. You can requested specific pages or entire editions via orders@nationalboard.org and/or (614) 888-2463.
Of course CPSO Ari Swartz and I have some of the above also, so you might check with us before going to NBBI, IHS, ASME, Amazon, or my personal favorite—Googling for public domain sources (and yes, bootlegs).

NFPA Access Problems (IHS Workbench and NFPA itself)


IHS Markit

New Read-only Restrictions Are in Effect

NFPA 70®, 2020 Edition - National Electric Code® (NEC)

To provide the level of copyright protection the National Fire Protection Association (NFPA) requires, the NFPA 70 is now available in read-only format. All providers, including NFPA themselves, will offer only this new read-only format. Downloading or printing of the NFPA 70 is no longer available per NFPA policy. All other functionality will remain, including annotations, watch lists, and the ability to include the document in shared project folders.

For additional information please contact IHS Markit Customer Care.

For a few months now, the NFPA has chosen to only deliver their codes and standards as read-only. This results in several problems:

1. PDFs are not downloadable from IHS so can't keep a personal copy and have to go back to IHS repeatedly to access it
2. Accessing online ties up one of the three licenses that LANL has for NFPA (so, as will all IHS usage but especially for NFPA, users need to be courteous and logout promptly after use)
3. Copying excerpts is very, very clunky.

There's no known workaround and no word on when NFPA may reverse course. If users have access issues due to license restrictions they should retry after 10 minutes; after that, let the Library know. Another possibility is to access same clunkers directly from NFPA at https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/Free-access.

LANL's IHS Eng Workbench online codes & standards subscription news

Document number: ACI 318
Publication Date: June 2019
Title: Building Code Requirements for Structural Concrete (ACI 318-19) Commentary on Building Code Requirements for Structural Concrete (ACI 318R-19)
Type of Change: Errata/Erratum
[Note: LANL not using the 2019 yet since 2015 IBC invokes 318-2014]

Document number: ASHRAE 55

Publication Date: 2020
Title: Thermal Environmental Conditions for Human Occupancy
Type of Change: Complete Revision

Document number: IES RP-1
Publication Date: 2020
Title: Recommended Practice: Lighting Office Spaces
Type of Change: Complete Revision

Document number: NETA ATS
Publication Date: 2021
Title: Standard for Acceptance Testing Specifications For Electrical Power Equipment & Systems
Type of Change: Complete Revision

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED
Re https://www.osha.gov/construction/engineering
This OSHA webpage has two relatively recent reports of possible interest. The horrific FIU bridge s@$&-show involved precast concrete and third-party inspections (whaaaat?) and both that and the comm tower collapse were relying on using "people who do this for a living"— what could possibly go wrong? Click the "(PDF)"s below to read exec summaries, etc.

- **July 2019:** Investigation of March 15, 2018 Pedestrian Bridge Collapse at Florida International University, Miami, FL (PDF)
  - A pedestrian bridge under construction collapsed and fell over the SW 8th Street near SW 109th Avenue in Miami, Florida. The bridge was being constructed to connect the FIU campus with the City of Sweetwater. The bridge, at this stage of construction, consisted of a single concrete truss spanning approximately 174 feet and weighed approximately 930 tons. The concrete bridge was cast at a nearby off-site location and then transported to its final location. At the time of the collapse, motorists were waiting underneath the bridge for the traffic light. One employee and five motorists were fatally injured, and another employee permanently disabled.

October 2018: Investigation of the April 19, 2018, Communication Tower Collapse in Fordland, Missouri. (PDF)

- The project involved the reinforcement of the KOZK 1,891-foot-tall guyed communication tower just north of Fordland, Missouri. The tower required structural modifications to support the transmission line replacement. However, the suggested diagonal replacement procedure was flawed in that it compromised the effectiveness of the integrated surrounding braces and the load bearing capacity of the tower legs. At the time of the collapse, contractor was performing structural modifications to the tower.

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

- **International Women's Day - March 8, 2021**
- **Randall Austin Honored by The National Board of Boiler and Pressure Vessel Inspectors**
- **Training & Qualification**
- **LANL Standards Issued in Feb**
- **Engineering Processes News**
- **DOE Technical Standards Action**
- **National Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

The views expressed in this email are not necessarily those of my employer.
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