

ENGINEERING STANDARDS UPDATE

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

Topics this month:

- Help Wanted!
- More Retirements
- Training & Qualification
- LANL Standards Issued in June
- DOE Technical Standards Action
- National 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.

Hoping this is read by all the folks on vacation this week!

HELP WANTED!

If you like technical standards type work then do we have an opportunity for you! ES-FE has a new position posted and available for applicants. Salary of \$104-173K but who cares about that—you get to work for Dan Tepley and with me 😊



Engineering Standards (Engineer 3) Job Ad IRC85997

External: <https://lanl.jobs/los-alamos-nm/engineering-standards-engineer-3/960a299670464f4cb0eeda4bde4c29f9/job/> (scroll down for details)

Internal: https://ebzp1.lanl.gov:443/OA_HTML/OA.jsp?OAFunc=IRC_VIS_VAC_DISPLAY&OAMC=R&p_svid=85997&p_spid=3798384&p_lang_code=US

- Serves as a Point of Contact (POC) and resource to the Laboratory and ES Division in the development, maintenance and improvement of Engineering Standards in the LANL Engineering Standards Manual (ESM), STD-342-100 through 600, including associated LANL facility engineering program elements;
- Works with ESM chapter discipline owners to update and revise ESM chapters to meet current LANL, Department of Energy, and industry standards;
- Owns select ESM chapters and is responsible for updating these chapters to align with technical and DOE requirements and industry best practices;
- Serves as POC for variances, alternate methods, and clarifications relating to the ESM;

- Mentors users in understanding and implementing the ESM and associated program elements;
- Functions as POC in the development, delivery, and maintenance of ESM training courses.
- Provides interface, coordination and technical input to other Engineering functions, including facility engineering processes, engineer qualification and design.

Heir to the throne? Maybe...



MORE RETIREMENTS

I noted Jim Streit's retiring at the end of July last month. Also:

- Long-time structural SME/POC **Glen Pappas'** last work day is July 15. Glen's been the workhorse producing most of the structural spec, detail, and ESM Chapter 5 revisions since about 2004 along with his day job. His passion for the work and attention to detail is second to none. Glen leaves crazy big shoes and his team leader Mike Denlinger will be stepping in them (it?) along with Mike Salmon, the chapter POC.
- Also, **Matt Foster**, who led the Startup Group of PIO and served as LANL's Commissioning Authority and ESM Chapter 15 POC for the past 5 years just retired. Acting for him are Charles Richardson (line item and TA-55 projects) and Cindy Dilworth (the rest).

For our friends in the Northwest:



Jeff Cowan
June 25, 4:02 PM '21

TRAINING & QUALIFICATION

ASME B31 Piping & Pipeline Standards, Wednesday, July 7 from 12:30 PM - 1:30 PM EDT. By ASME, free and open to the public. Register for the Webinar: <https://app.webinar.net/1mpK4ky8LMN>

Call for interest:

Pressure Safety Overview, U-Train course 52955 and/or

ASME B31.3 Process Piping, U-Train course 53900.

Please email Ari (Ben) Swartz and Yolanda Trujillo yjtrujillo@lanl.gov identifying what you desire and they will schedule classes once there is enough interest.

Online National Standards

Virtual seminars at noon MT:

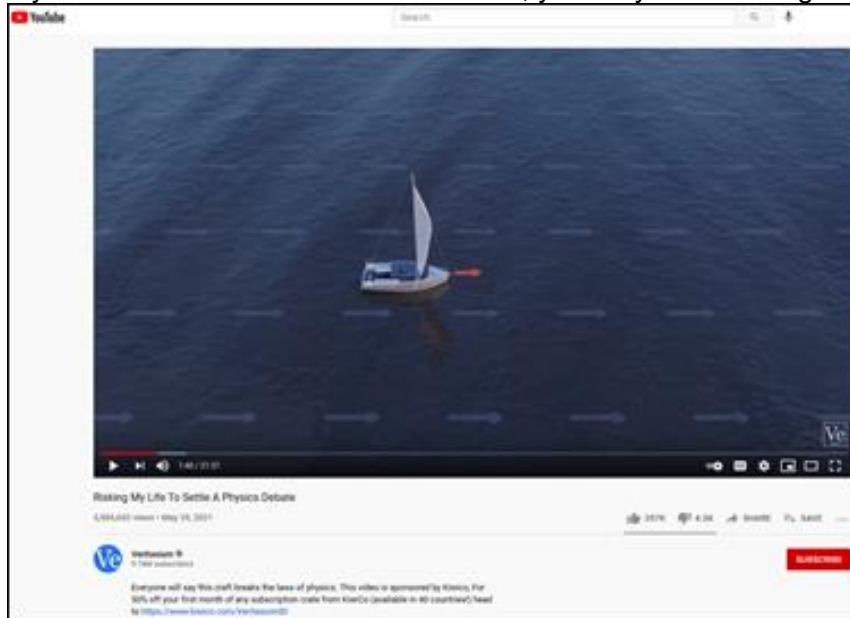
8/18, **IHS Engineering Workbench**: <https://lanl.libcal.com/event/7958569> (MSTeams)

9/16, **IEEE Xplore**: <https://lanl.libcal.com/event/7987179> (Webex)

Thanks to Sarah Lynn Hayes at the Research Library, 667-0437

Apropos to last month's couch tear meme:

If you see a sailboat on the water below, you may be watching science vids.



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

ESM-Chapter	Section	Title	Rev.	Date	Summary
Chapter 13 Welding, Joining, and NDE	Vol 1, 1-02	Att.3 - Weld Inspection Record (Excel File)	2	6/10/2021	Thanks to POC David Bingham.
Chapter 21 - Software	SOFT-GEN, SOFT-V&V	Forms 3046 - Software Risk Register (SWRR) Template and 3056 - Software Requirements Traceability Matrix (SWTM)	-	June	Forms updated; both Ch 21 and non-Ch 21 (P1040-controlled) software refer to these. Form owner: Nathaniel Hein

Master Specs STD-342-200

Spec Number	Rev.	Spec Title	Effective	Summary of Latest Revision
01 8712	1	Seismic Qualification of Equipment - Nuclear-Safety Related	6/28/2021	Updated to implement ESM Ch 5 Section III r9 adoption of ASCE 43-19. Thanks to POC Glen Pappas.

STD Drawings and Details STD-342-400

Chapter	Topic	Dwg. #	Sheet	Rev.	Title	Date	Summary
Structural	Motor Control Center Anchorage	ST-D5020-3	1-3	1	Various		Added notes to webpage regarding Seismic Design Category C. Thanks to POC Glen Pappas.
Structural	Wall-Mounted Equipment	ST-F1033 series	1-4	1	Various		Added notes to webpage regarding Hilti KB-TZ2 and Seismic Design Category C. Thanks to POC Glen Pappas.
Electrical	Square D Three Phase Transformer Anchorage and Concrete Slabs on Grade	ST-G4010-38	1	3			

DOE TECHNICAL STANDARDS ACTION

Tech Stds Program [postings](#) in the past month: None

NATIONAL STANDARDS ACTION

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

FYI, IHS access went down July 1 but is now back.

POC Ari (Ben) Swartz would tell you that, per ESM Ch. 1 Z10, LANL adopts new ASME codes no later than 6 months after issuance. Since that was June 18, 2021, designs beginning on or after December 18, 2021 need to use it. Also, expect the next B31.3 to be in 2022. That isn't too far away if it happens on time this cycle;-)

Document: **ASME B31.3**, Process Piping

Publication Date: 2020

Type of Change: **Complete Revision**

Document number: **IEEE NESCIR592**, National Electrical Safety Code

Publication Date: **2/4/2021**

Type of Change: **Interpretation**

Maybe some LANL Firetrace systems would use CO2...

Document: **NFPA 12**, Standard on Carbon Dioxide Extinguishing Systems

Publication Date: 2022

Type of Change: **Complete Revision**

Some deluge systems maybe...

Document: **NFPA 15**, Standard for Water Spray Fixed Systems for Fire Protection

Publication Date: 2022

Type of Change: **Complete Revision**

MSS DOCUMENT CHANGES

Below are recent changes issued by Maintenance and Site Services Division per Jeremy vonHarders. The first ones are work control related and O&M/PMI-related follow those.

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.

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

Criterion 502 Rev 3: Exterior Security Lighting Systems

Revised document using DOE O 473.3A Chg 1 (min Chg), Army TM 5-684 Navy NAVFAC MO-200 Air Force AFJMAN 32-1082 Facilities Engineering Electrical Exterior Facilities, 2019 NFPA 70B and 2017 NFPA 70

- Revised Section 6.2 language to match requirements in DOE O 473.3A Chg 1 (min Chg)
- Group relamping 4 year frequency has additional frequencies based on performance of the lamps.
- Cleaning of fixtures/luminaires has additional detail.
- Added new definition luminaire as defined in NFPA 70 National Electrical Code
- Changed references for security lighting requirements from cancelled DOE M 5632.1C to replacement DOE O 473.3A Chg 1 (min Chg).
- Added new acronym ODFSA
- Replaced SMPOR with Stds Discipline POC

Direct link:

https://logistics.lanl.gov/MSS/_layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx

Criterion 710 Rev 4: Foam-Water Sprinkler Systems

- Updated to fix findings from the 2019 Fire Protection ITM Self Inspection: IM-2020-135. Added note, no change to frequency
- Expanded Baseline Operational Criteria
- Major reformatting of Section 6.0 to match template
- Added Table 6-2 to summarize ITM frequencies
- Updated frequencies to 2020 NFPA 25 by adding the following:
 - o Weekly inspection of control valves (not locked/supervised)
 - o Weekly inspection of master pressure-regulating devices
 - o Monthly inspection of operability of all gauges
 - o Monthly inspection of foam-water discharge devices
 - o Quarterly inspection of (exterior) alarm / system riser check valves
 - o Quarterly inspection of pressure-reducing valves
 - o Quarterly testing of quick-opening devices
 - o Quarterly testing of master pressure-regulating device (partial-flow)
 - o Annual inspection of low temperature alarms
 - o Annual inspection of piping through refrigerated spaces (internal)
 - o Annual testing of supervisory signal devices
 - o Annual testing of master pressure-regulating device (full-flow)
 - o Annual inspection/maintenance of dependability of water supply
 - o Five-year inspection of backflow prevention assemblies (internal)
 - o Five-year testing (hydrostatic) of FDC piping
- Updated frequencies to 2020 NFPA 25 by moving the following:
 - o Moved inspection of water pressure gauge from weekly to quarterly
 - o Moved inspection of electrically supervised control valves from monthly to quarterly
 - o Moved inspection of overspray bags from quarterly to annually

- o Moved inspection of information signs from quarterly to annually
- o Moved testing of dry-type sprinkler heads from 10-year to 15-year
- Updated ITM to be system-specific by deleting the following:
 - o Monthly inspection of foam proportioning system (kept some items)
 - o Monthly maintenance of foam concentrate pump (operate/circulate)
 - o 5-year maintenance of ball drip drain valves
 - o 5-year maintenance of foam pumps, drive trains and drivers
 - o 5-year maintenance of diaphragm balancing valve
 - o 10-year inspection of foam liquid storage tank (corrosion)
 - o 10-year inspection of pickup pipes inside foam concentrate tank
 - o 10-year maintenance of foam liquid storage tank (drain/flush/refill)

Direct link:

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

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Three recent collapse events are described below. None are necessarily the fault of engineers and seem to be other factors.

The recent Florida condo event is well-known. A fairly brief look:

● **'Major problems'**: There were many warnings before the Florida building collapsed. [And precious time was wasted.](#)

A more in-depth look with modelling:

Video, images and interviews deepen questions about role of pool deck in condo collapse

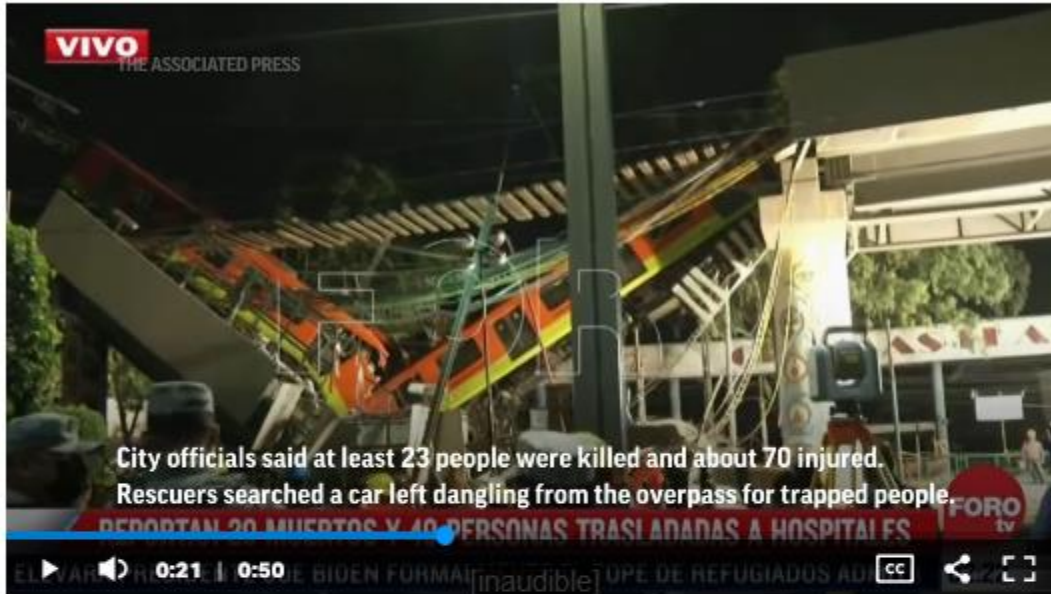
The Post interviewed more than a dozen experts and modeled the building to better understand the potential points of structural failure.

<https://www.washingtonpost.com/investigations/interactive/2021/building-experts-miami-condo-collapse/>

There was also a collapse in Mexico City two months ago with likely causes described below.

https://www.usatoday.com/story/news/world/2021/06/16/mexico-city-subway-collapse-report-construction-deficiencies/7723346002/?utm_source=usatoday-Daily%20Briefing&utm_medium=email&utm_campaign=narrative&utm_term=article_body&utm_content=8872UT-E-NLETTER02-Weekday

Published 9:24 p.m. ET Jun. 16, 2021 | Updated 3:39 p.m. ET Jun. 17, 2021



Mexico City overpass collapse kills at least 23

An elevated section of the Mexico City metro collapsed and sent a subway car plunging toward a busy boulevard late Monday, killing at least 23 people and injuring about 70, city officials said. (May 4) AP

MEXICO CITY – A preliminary report by experts into the [collapse of a Mexico City elevated subway line that killed 26 people](#) placed much of the blame Wednesday on poor welds in studs that joined steel support beams to a concrete layer supporting the track bed.

The city government hired Norwegian certification firm DNV to study the possible causes of the May 3 accident, in which a span of the elevated line buckled to the ground and dragged down two subway cars.

The report also said there were apparently not enough studs, and the concrete poured over them may have been defective; the welds between stretches of steel beams also appear to have been badly done.

“The studs showed deficiencies in the welding process,” the report says.

**And finally,
Pedestrian bridge collapses onto DC freeway, injuring several people**



<https://www.cnn.com/2021/06/23/us/pedestrian-bridge-collapse-washington-dc/index.html>

It sounds like it's a driver's fault, although:

"...recent construction work on the bridge was to address the safety of some of its concrete and did not involve structural issues." Huh??? Maybe walking surface spalling.

LAST MONTH'S UPDATE TOPICS

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

- **Jim Streit's July Retirement**
- **Codes and Standards Access Change**
- **Training & Qualification**
- **New ES-EPD Site Field Engineering Team Leader – Shawn Wright**
- **LANL Standards Issued in May**
- **Tailored Standards Manual (TSM) STD-342-600**
- **MSS Document Changes**
- **DOE Technical Standards Action**
- **National Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

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To request a change to this newsletter's distribution, please contact me.

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