

ENGINEERING STANDARDS UPDATE

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

Topics this month:

- Memes
- ES-EPD Org Change
- Contact Mod for DOE O 420.1C Chg 3 (LtdChg), Facility Safety
- Training & Qualification
- LANL Standards Issued in Dec or So
- 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.

First, a retraction: A couple of readers questioned last month's meme on Arabic numerals; seems it wasn't accurate and I should have disclaimed or omitted entirely since factuality is important to rational people.



ES-EPD ORG CHANGE

Michael Richardson is now the acting Engineering Manager for ES-EPD replacing Dennis Graves who left LANL in December. Best to both of them!

CONTACT MOD FOR DOE O 420.1C CHG 3 (LTDCHG), FACILITY SAFETY

Triad's Prime Contract (ref Att J, App B) was modified (Mod 47) on October 12, 2020 to impose the above order instead of Chg 1. Change 3 concerns reactors (none here), but Chg 2 impacted several engineering disciplines (primarily fire and structural) as well as Safety Basis and Crit Safety. Triad has formal plans to make implementation effective and efficient; for the LANL

Standards, revisions to affected ESM Chapters are in the works. Projects about to get underway should discuss approach with ES management and NNSA in this interim period. The contract: <https://int.lanl.gov/org/ddops/pcm/prime-contract/mods.shtml>

Another change P00047 made was to remove DOE O 430.1C Real Property Asset Management. That hardly mattered because the presence of the NNSA's Supplemental Directive SD 430.1 in the contract has the mandate (which is the origin of the mandate for High Performance Sustainable Building).

Happy New Year; 2020 was a bust. On that note:



Those under 50 might not have had the pleasure. And nowadays it's just Gatorade so seniors can tell their kids "I remember when prep was..." at the same time they complain about walking to school in snow uphill both ways.

TRAINING & QUALIFICATION

COE Safety Basis Overview for Engineers Course [39564](#), Tuesday, Feb 2 from 8–11 am via Webex. Registrants will receive Webex instructions prior to start. POC: Joy Getha, 5-9586, jgetha@lanl.gov.

Electrical Standards – Tues, Feb 9, 8:00-noon

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.

CGD Preparers Curriculum 5925 has been updated to include Course 51122, COE Commercial Grade Dedication (CGD) Requalification Slides and Quiz. If you need to requalify as a CGD Preparer please log into UTrain and complete this task. If you have expired in your Qualification, you will need to be authorized in WQAS by your manager upon successful completion of #51122. It is recommended that all individuals assigned 5925 check their To Do

list in UTrain to verify their specific training needs. If you have any questions please contact your Training Specialist for assistance. (Thanks to Stan Hayes and Yolanda Trujillo)

For UTrain Courses: Registering: 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.

See a theme here?



LANL STANDARDS ISSUED IN DEC OR SO
Engineering Standards Manual ESM STD-342-100

ESM-Chapter	Section	Title	Rev.	Date
Ch 16 – IBC Program	IBC-GEN	For Form 5 : Building/System Final Inspection Checklist and Certificate of Occupancy—added Reference: CoO Checklist Template . Thanks to Landry Milnes, Amy Gitnick, others. Amy writes: The intent of this form is for the PE to tailor it for the project, then provide it to the IPT including FEs, inspectors, ES-FP, OSH-ISH, PM, etc. as noted on the form during punchlist walkdowns. The IPT members can confirm that these items are complete and that no issues will arise for obtaining Certificate of Occupancy. If any item is not complete, it should be noted on the official punchlist owned by the PM/STR/Construction Super.	-	12/7/2020
Ch 17 - Pressure Safety	ADMIN-3	Forms FM01 and 03 updated for pressure regulator purchase. Thanks to POC Ari Swartz.	-	12/9/2020

Master Specs [STD-342-200](#)

Section	Section/Title	Rev.	Date	Summary of Revision
				Added “MasterFormat 2020 Revisions” file near top of Specs webpage to be used along with “MasterFormat 2018 Changes from 2016” file when referring to CSI MasterFormat 2016 Spec Numbers & Titles Index (~186 pgs) -- use when creating project specs not in LANL Masters.

CAD Standards Manual [STD-342-300](#) POC Scott Richardson

Section	Section/Title	Rev.	Date	Summary of Revision
200	CAD Requirements	5 chg2	1/5/21	Updated Section 214 3.0.D regarding required AutoCAD version from “2021 or newer” to “2020 or newer”
200	CAD Requirements	-	12/16/20	Digital Signature Title Block and Sheet Template updates.

STD Drawings and Details STD-342-400

Chapter		Dwg. #	Sheet	Rev.	Title	Date
Chapter 3 - Civil	Parking Lots	ST-G2020-1	2	4	Parking Layout (Accessible and Motorcycle). Added parallel parking detail. Thanks to SME Natalie Romero-Trujillo, POC John O'Brien	12/8/2020

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.

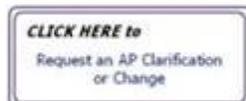
AP-341-705 Make or Buy Determination for Design Engineering, Rev. 0	11/5/2020	Effective 12/4/2020.
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If you have been identified as requiring additional training on an AP you will see an assignment on your UTrain “to do” list.

More updates

- AP-341-405 Identification and Control of Technical Baseline in Operating Facilities, Revision 5 is in second review and scheduled to be approved mid-month.
- AP-341-720 Engineering Construction Submittals, Revision 0 is currently in review cycle. This AP was previously under Project Management but was transferred to Engineering Services. Should enter second review soon.
- The following APs are up for revision within the next several months. Please submit any comments or requests for changes through the COE Engineering Procedures SharePoint site.
 - AP-341-404 Master Equipment List
 - AP-341-616 Technical Baseline Change During Design
 - AP-341-503 Technical Evaluation of Replacement Items
 - AP-341-801 Post Modification/Post Maintenance Testing

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](#).



A webpage of the AP pdfs can be reached from LANL Internal with any browser/machine combo (also, you can easily get to int.lanl.gov from mymail.lanl.gov). Once in, you can navigate from the top of the [CoE home page](#) or directly [here](#). On the other hand, if you need the AP Word forms, open a terminal session and use IE for SharePoint for best results. When all else fails, email Christina Salazar-Barnes which is good advice for many matters.

O&M CRITERION CHANGES

Below are recent O&M Criterion and related Preventative Maintenance Instruction (PMI) changes issued by MSS-MP, the Maintenance Programs Group of Maintenance and Site Services Division. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities.

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

PMI: 503-A R3: Emergency Light Inspection, Testing, and Maintenance

- Added step to verify self-testing/self-diagnostic features are working.
- Reformatted the Attachment 3 Data Sheet

You can access this document by clicking here:

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

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:

Document number: [ACI 318 ERTA](#)

Publication Date: **11/2/2020**

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**

Document number: [ASME B31.9](#)

Publication Date: **12/31/2020**

Title: **Building Services Piping**

Type of Change: **Complete Revision**

Document number: [ASTM G57](#)

Publication Date: **11/1/2020**

Title: **Standard Test Method for Measurement of Soil Resistivity Using the Wenner Four-Electrode Method**

Type of Change: **Complete Revision**

[at LANL, referenced by D5010, Ch 5 Sect I and Ch 16 LBO-Approved Testing Agencies]

For the following NFPA: ESM Ch 1 Z10 requires that amendments like this one be followed, but it will only apply when LANL adopts the 2020 NFPA 30. Z10 and DOE-STD-1066 discuss which version of NFPA standards to use, but this is likely formally changing soon to a blended approach where newer (but not necessarily latest) editions are controlled by ESM Ch. 2.

Also, NFPA, like some others, has instituted digital rights management (DRM) software. Per library's FAQ: This requires a free Adobe Acrobat plug-in that "locks" the PDF file to the computer on which it was first opened. With admin rights on your computer, [Click here to download the plug-in](#). Once FileOpen is working, you can view, print or download the file.

Document number: [NFPA 30 AMD 2](#)

Publication Date: **8/11/2020**

Title: **Flammable and Combustible Liquids Code**

Type of Change: **Amendment**

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

The article below says "...the SEOSAT-Ingenio project cost around 200 million euros, or \$236 million." That's a painful hit. This was the second failure in 16 months; this time it was a "quality and production issue," but with good CoE it might have been anticipated and prevented with better labelling, procedures, and/or inspection driven by engineering (assuming they weren't cut out of the process for the sake of expediency).

Arianespace traces cause of Vega launch failure to 'human error', November 17, 2020 **Stephen Clark**

From <https://spaceflightnow.com/2020/11/17/arianespace-traces-cause-of-vega-launch-failure-to-human-error/>



A Vega rocket took off Monday night from French Guiana with two European satellites, but the launcher failed to deploy the payloads into orbit. Credit: Arianespace

"Inverted cables on the Vega rocket's upper stage control system apparently caused the launcher to tumble minutes after liftoff Monday night, a failure that resulted in the loss of a Spanish Earth observation satellite and a French research probe, Arianespace officials said Tuesday...

'...Israël said the failure on Monday night's mission has "nothing to do" with the Vega failure last year...The previous failure was linked to a weakness of the design," Israël told reporters Tuesday. He added that the design problem blamed for the 2019 failure has been corrected, resulting in the Vega rocket's successful return to flight mission in September....'

LAST MONTH'S UPDATE TOPICS

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

- **Dan Tepley becomes CoE Office Director**
- **Training & Qualification**
- **LANL Standards Issued in Nov**
- **Engineering Processes News**
- **DOE Technical Standards Action**
- **National Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

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