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## ENGINEERING STANDARDS UPDATE

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

### Topics this month:

- **Training & Qualification**
- **Structural POC Changes**
- **2021 Code Adoption Plans (IBC, IEBC, IFC)**
- **LANL Standards Issued in Oct**
- **National Standards Action**
- **DOE Standards Action**
- **MSS Document Changes**
- **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.

### TRAINING & QUALIFICATION

#### **ESM Chapter 21 Software -- Overview and Owners Courses -- Series Begins Nov 15**

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). If you follow ESM Chapter 21 Software then you need to take training on the chapter. The managers (including FDARs) of Owners only need the overview.

So...if you, in fact, need training, please register in UTrain for the course(s) below. If you're not sure what you need, contact SME/instructor Joy Getha, 5-9586, [jlgetha@lanl.gov](mailto:jlgetha@lanl.gov).

· 38047 ESM Chapter 21 Software Overview Course 3 hours. (RLMs and Owners): Tuesday, November 15th, from 1 - 4 PM; Teams

· 34048 ESM Chapter 21 Software Owner's Course 3 additional hours (just Owners return for this): Thursday, November 17th, also from 1 - 4 PM Teams

Joy Getha wrote "Please make every effort to set aside these times to take these courses. They may not be offered again for the foreseeable future."

**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 person Stan Hayes ([sehaves@lanl.gov](mailto:sehaves@lanl.gov)) or Nick Jones, ([n.jones@lanl.gov](mailto:n.jones@lanl.gov)) with Z number. For any UTrain or Teams issues contact Stan Hayes or Nick Jones. The instructor may have to invite you to Teams or Webex specifically just before starting time.

Software?

Science Humour  
Cabdi Rasaaq · Yesterday at 5:10 AM · 🌐

For softer wearables



😂👍 1.3K 50 Comments 128 Shares

👍 Like    💬 Comment    ➦ Share

Top comments ▼

 Write a public comment... 🗨️ 📷 📄 🗑️

 Claire Fearnley  
The one on the left stops the machine at the beginning. You have to take the clothes out, unplug and replugin the machine, and put the clothes back in. You may have to do this a couple of times before it works as hoped.

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**STRUCTURAL POC CHANGES**

With Mike Salmon just-retired and Mike Denlinger to be same in a few weeks, we have designated Carlos Arturo Coronado R (Restrepo), ES-SPD as new POC for LANL Structural standards, including ESM Chapter 5 and related specs and standard details. ([carlos.coronado@lanl.gov](mailto:carlos.coronado@lanl.gov), [505-795-5500](tel:505-795-5500))

When Carlos is unavailable and an issue cannot wait, his alternate is Andrew Giesler, ES-IPD.

On the topic of structural – The 03 3001 Reinforced Concrete spec section was revised in October and can now be employed by projects underway to solve the issue of design mix changes discussed in last month's Update. The non-structural concrete spec sections are being formatted and issued any day now.

**2021 CODE ADOPTION PLANS (IBC, IEBC, IFC)**

As noted in June, we expect to adopt the 2021 International Building, Existing Building, and Fire codes this winter (e.g., January 2023) via a revision to the ESM (primarily Ch 2, 5 and 16). As such, LANL projects should continue to cite the 2015 IBC in their code of record listing. The exception is projects not expected to get underway with design until after January or so – they should cite 2021 in their code of record drafts.

LANL STANDARDS ISSUED IN OCT <https://engstandards.lanl.gov/>

 Engineering Standards Manual ESM [STD-342-100](#)

ESM Chapter(s)	Section	Title	Rev.	Date	Comments
7 - Electrical	D5020	Lighting & Branch Circuit Wiring	6	10/13/2022	Added Purpose/Scope. Numerous other changes throughout. Incorporated VAR-2014-046, Non-Powered Exit Signs; VAR-10183, Allowance for multi-wire branch circuits; VAR-10139, Dedicated Equipment-grounding Conductors and Raceways, and VAR-10548, Elimination of Restrictions on Flexible Cords and Cables. Removed requirement to perform life cycle cost analysis for LED luminaires. Removed requirements for special computer receptacles and combined into general-purpose receptacles. Added requirement to use European voltage transformers to supply European equipment. Adjusted requirements for the size of motor that can be started on a transformer. Removed locations of where GFCIs are required when the requirement is already in NFPA 70. Added Requirements ID Log references (LANL internal-use log posted with chapter). <b>Thanks to POC Eric Stromberg.</b>
7 - Electrical	Reference	Ch7-Requirements-ID-Log (D5020 only)		10/28/2022	NEW!

**Any day now:** ESM Ch 9 Security, Tailored Stds Manual Rev. 1

 Master Spec Sections [STD-342-200](#)

Section Number	Rev.	Section Title	Effective	Summary
03 3001	16	Reinforced Concrete	10/24/2022	<b>New pozzolan-based preapproved mix designs incorporated</b> (so don't use <a href="#">VAR-10580, Concrete Placements with New Pozzolan Design Mixes Pending Final Results</a> ). Thanks to former POC Mike Denlinger.

In honor of D5020 being issued (and changes re cords), an EE dad joke/pun:



### **NATIONAL STANDARDS ACTION**

Per IHS Eng Workbench subscription via Research Library

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

Publication Date: **9/29/2022**

Type of Change: **Errata/Erratum to 2019 edition (note LANL doesn't use this edition as yet).**

Document number: **NFPA 25-2023, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems**

Publication Date: **9/23/2022 (eff. 9/1)**

Type of Change: **Revised**

### **NFPA matters – LANL Notes**

- Required NFPA versions for projects are per ESM Ch 2 Att. A
- **Access:** Users can read online, not download pdfs. This occasionally causes an issue with LANL's three NFPA licenses occasionally being tied-up and denying access. Please help alleviate this by logging off when you're not actively using EWB (this goes for all societies). To log off, click your name (upper-right) and log off from drop-down. As another workaround, users can always register on NFPA.org and have read-only there just as they have it on EWB. If you need them a lot, you can subscribe to NFPA LiNK for \$89/year.

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**DOE TECHNICAL STANDARDS ACTION**

[Tech Stds Program postings](#) in the past month:

[DOE-HDBK-1100-2004 \(Reaffirmed 2022\), Chemical Process Hazards Analysis](#)

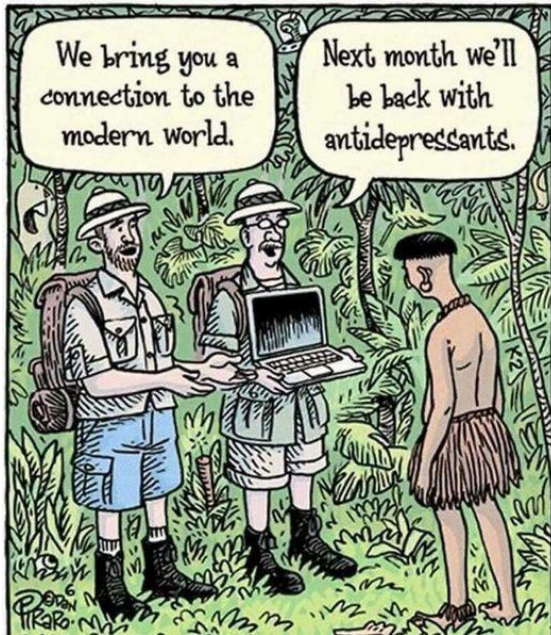
The purpose of this handbook is to facilitate, within the DOE, the performance of chemical process hazards analyses (PrHAs) as required under the PSM Rule. It provides basic information for the performance of PrHAs, and should not be considered a complete resource on PrHA methods. Likewise, to determine if a facility is covered by the PSM rule, the reader should refer to the handbook, ""Process Safety Management for Highly Hazardous Chemicals"" (DOE-HDBK-1101-2004). Supersedes DOE-HDBK-1100-96

[DOE-HDBK-1215-2014 Chg Notice 1 \(Reaffirmed 2022\), Optimizing Radiation Protection of the Public and the Environment for use with DOE O 458.1, ALARA Requirements](#)

This Handbook provides information to assist the Department of Energy (DOE) program and field offices in understanding what is necessary and acceptable for implementing the As Low As Reasonably Achievable (ALARA) provisions of DOE Order (O) 458.1, Radiation Protection of the Public and the Environment. It identifies the goals, requirements, and issues that need to be addressed when developing ALARA analyses for the optimization of various programs to support DOE's diverse missions. Various case studies and examples are also provided to further assist in implementing the ALARA process. This Handbook was reaffirmed in September 2022.

[DOE-HDBK-1216-2015 Chg Notice 1 \(Reaffirmed 2022\), Environmental Radiological Effluent Monitoring and Environmental Surveillance](#)

This Handbook describes elements that may be used to implement the radiological effluent monitoring and environmental surveillance requirements in DOE O 458.1. The Handbook can be used by all DOE elements, including the National Nuclear Security Administration (NNSA), and their contractors to support the implementation of DOE O 458.1. This Handbook was reaffirmed in September 2022.



### **MSS DOCUMENT CHANGES**

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

Access here:

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

### **AP-WORK-002 Revision 23: Work Planning (MSS-WC)**

- Added provisions to notify field inspectors and OSH of hold points to meet LANL IM 2022-6501-1. Provided additional clarifications to the work order revision process.

**O&Ms: 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. If you have issues with SharePoint sites use a Microsoft browser to access them.

MSS-DO has issued the below O&M Document:

### **O&M 407 Rev 4: Emergency Eyewash and Shower Equipment**

- Added precautions for slips and falls during testing/actual need
- Added operations requirement for maintaining clear access to stations
- Added annual shower requirements: visual inspection, actuator operation, 15 minute flow time, unauthorized shutoff, enclosure diameter, flushing fluid reservoir in self-contained units

- Added annual Eyewash Equipment requirements: visual inspection, nozzle covers, valve timing, unauthorized shutoff, test gauge, flushing fluid reservoir in self-contained units
- Added annual eye/face wash unit requirements: visual inspection, valve timing, nozzle covers, isolation valves, test gauge, flushing fluid reservoir in self-contained units
- Added annual combination unit requirements: visual inspection, flow timing
- Updated to template and added hyperlinks to internal LANL document references.

### **O&M 506 Rev 5: Emergency and Standby Power Systems**

Updated to meet 2022 NFPA 110 as follows:

- Included statement that a load bank can be used to meet the 30% loading for diesel generators.
- Changed reference to 2016 NFPA 110 to 2022 NFPA 110 throughout document.
- Made editorial changes to match wording in 2022 NFPA 110
- Updated referenced section numbers to match 2022 NFPA 110.

Other changes made as follows:

- Editorial changes to enhance wording.
- Updated references dates to other standards to match most current standard once verification that requirements are the same as previous edition.

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

Re the order of operations with math --

idk what stresses me out more, the fact that 26% somehow got 13 or the fact that the correct answer isnt even an option





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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**
- **Tom Wando Returns to ES-Div**
- **Lead SME (LSME) Designations in ES**
- **Concrete Placements — Avoid a Slump**
- **Data Call for National Standards Committee Work**
- **LANL Standards Issued in Sept**
- **National Standards Action**
- **Fire Prevention Week – 100<sup>th</sup> Observance**
- **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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