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## ENGINEERING STANDARDS UPDATE

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

### Topics this month:

- 2021 IAPMO Mechanical and Plumbing Codes (UMC & UPC)
- Gender-Neutral Restroom Addendum to ESM and TSM
- Training & Qualification
- May is Building Safety Month
- LANL Standards Issued in April or so
- SharePoint Users: Microsoft Edge versus IE
- Engineering Processes News
- DOE Technical Standards Action
- National Standards Action
- MSS Document Changes
- When Good Conduct of Engineering Isn't Followed

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.



No Russian vodka was consumed while copying memes after hours.

**2021 IAPMO MECHANICAL AND PLUMBING CODES (UMC & UPC)**

LANL has adopted the 2021 editions of these for new project starts effective April 21, following rulemaking by the State of New Mexico. See more under “LANL Standards Issued in April or so” and “National Standards Action” headings below.

**GENDER-NEUTRAL RESTROOM ADDENDUM TO ESM AND TSM**

A new requirement to provide gender-neutral restrooms in new construction and major remodels was issued as VAR-10526 effective April 12. A Lab-wide team including the Prism Employee Resource Group contributed to the final approach. Issuance is a notable step forward in the Lab’s efforts toward inclusivity. See more under “LANL Standards Issued in April or so” heading below.

**TRAINING & QUALIFICATION**

**24140 Intro to Eng Standards – Mon-Thurs May 9-12...Microsoft Teams -- Each day from 2:00-4:00 (it’s a total of 4 days and 8 contact hours, despite what UTrain may say). You must attend each day to receive credit. Self-assign in UTrain!**

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 hope most can attend**. Teams info is in UTrain and here (it’s a 4-day Outlook series): [Click here to join the meeting](#)

**ESM Chapter 21 Software -- Overview and Owners Courses – Begins June 2 -- Self-assign in UTrain**

Like 24140 above, **these live virtual courses are only taught when UTrain shows sufficient demand**. In this case: 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. The managers (including FDARs) of Owners only need the overview.

But...if you, in fact, need training, please self-assign in Utrain for the course(s) below. If you’re not sure what you need, contact me ([oruch@lanl.gov](mailto:oruch@lanl.gov); 5-8475) or SME/instructor Joy Getha, 5-9586, [jgetha@lanl.gov](mailto:jgetha@lanl.gov).

- 38047 ESM Chapter 21 Software Overview Course 3 hours. (RLMs and Owners) Thursday, June 2, 2022 9:00 AM-12:00 PM [Click here to join the meeting](#)
- 34048 ESM Chapter 21 Software Owner’s Course 3 additional hours (just Owners return for this). Thursday, June 9, 2022 9:00 AM-12:00 PM [Click here to join the meeting](#)

If you just need awareness at low level, so can self-assign/take 38040, a read/sign.

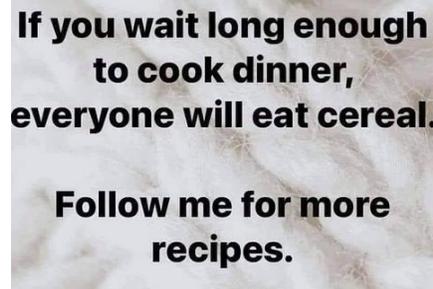
**Registering for UTrain Courses:** Go to **UTrain**, search on course, select and enroll. Disenroll if you have to bail. [AEs can also register for some; use token (CryptoCard) or contact ES

training guy Stan Hayes ([sehayes@lanl.gov](mailto:sehayes@lanl.gov)) with Z number. The instructor may have to invite you to Teams specifically just before starting time.]

**MAY IS BUILDING SAFETY MONTH** <https://www.iccsafe.org/advocacy/building-safety-month/building-safety-month/>

The theme for the International Code Council's 42nd annual Building Safety Month is "Safety for All: Codes in Action." The educational and interactive campaign raises awareness about the importance of building codes in ensuring safety in the spaces in which we live, work, and learn. The weekly themes for 2022 are:

- Week One (May 1–8): **"Planning for a Safe & Sustainable Tomorrow"**
- Week Two (May 9–15): **"Exploring Careers in Building Safety"**
- Week Three (May 16–22) **"Understanding Disaster Mitigation"**
- Week Four (May 23–31) **"Creating a Safe & Abundant Water Supply"**



**If you wait long enough  
to cook dinner,  
everyone will eat cereal.**

**Follow me for more  
recipes.**

Suzie's Food Glorious Food  
October 5 at 4:32 AM · 🍷

**LANL STANDARDS ISSUED IN APRIL OR SO**  
**Engineering Standards Manual ESM [STD-342-100](#)**

ESM-Chapter	Section	Title	Rev.	Date	Comments
Ch. 1 - General	200	Item Numbering and Labeling – Attachment 1: CMMS Upload Workbook	1.3	5/3/2022	Updates to 210 and 230 listings. Thanks to Alt. POC Charlie Nuss.
Chapter 4 - Architectural	C Interiors	Issued: <b>VAR-10526, Gender-Neutral Restroom Addendum to ESM and TSM</b>	-	4/12/2022	Thanks to Prism, Arnold Eng, Scott Richardson, others.
Chapter 13 - Welding	6-02	Attachment 3 - Written Practice for NDE Personnel Qualification & Certification	7	4/11/2022	Added need to meet additional requirements such as coming from ASME B&PVC and Phased Array Ultrasonic Testing (PAUT) and UT Thickness Level II Limited requirements. Thanks to SME David Harvey, POC David Bingham.
		Form 1 - NDE Certification Application			
Chapter 16 - IBC Program	IBC-GEN	Att. A: LANL Building Code (LBC)	13	4/21/2022	<b>UMC/UPC became 2021</b> , added NFPA 54 National Fuel Gas Code, other minor changes. POC: Tobin Oruch
Chapter 17 - Pressure Safety		Quality Control Systems Manual (R-Stamp Program and Federal Inspection Agency)	2	4/27/2022	Revised to support upcoming renewal review by the NBBI. Thanks to SME Randy Austin, POC Ari Swartz.

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

Section Number	Rev.	Spec Title	Effective	Summary of Latest Revision
11 5311.10	4	Glovebox Fabrication	4/5/22	Admin change to fix typos and links. Thanks to Maria Watkins, SI-DCRM
23 4133.19	-	HEPA Filters – Auxiliary Nuclear Grade	5/2/22	Reference: <a href="#">Manufacturer's Drawings</a> (internal only). Thanks to SME Scott Salisbury.

## SHAREPOINT USERS: MICROSOFT EDGE VERSUS IE

SharePoint users have been driven to using Internet Explorer to get full functionality for many years. But support for IE is ending in June, so what's a person to do? The answer is that MS Edge has an IE mode that gives it the ability to open needed webpages if you set it to do so. Here's how to do that, per Christina Salazar-Barnes.

### EDGE: Internet Explorer compatibility

Open Microsoft Edge

Click the ellipsis (...) on top right corner of page

Choose **Settings**

On Left Nav. click on **Default browser**

- Choose **Incompatible sites only (Recommended)** in *Let Internet Explorer open sites in Microsoft Edge* section
- Choose **Allow** in the *Allow sites to be reloaded in Internet Explorer mode* section
- Click **Add** in the *Internet Explorer mode pages* section
  - Paste in the web address you want to access.

Examples:

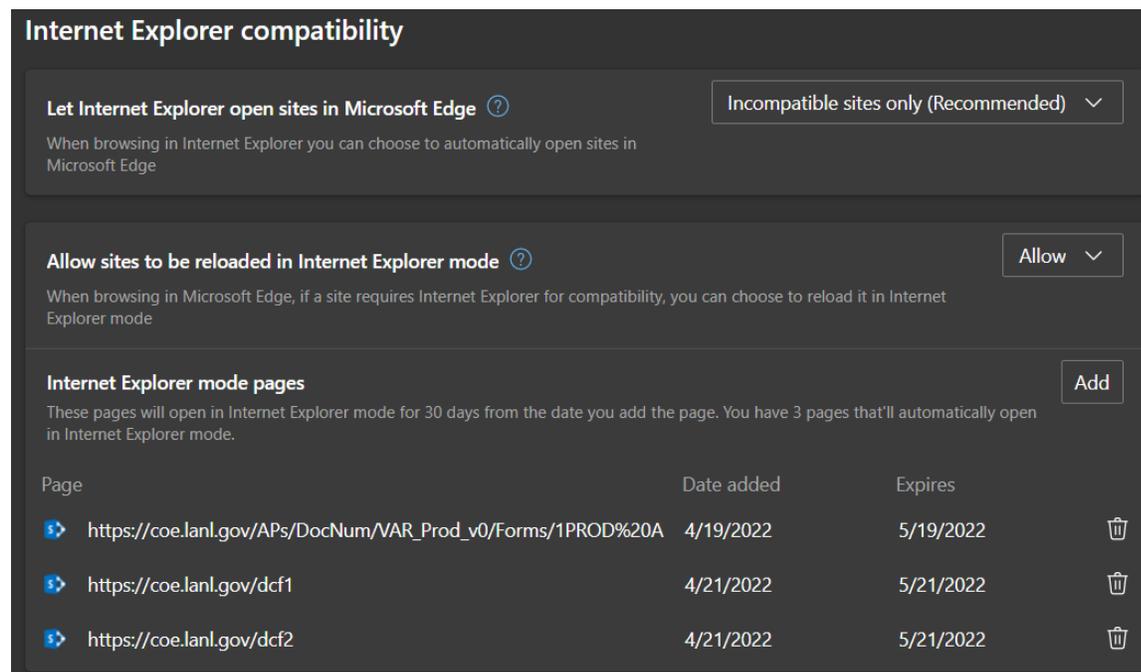
<https://coe.lanl.gov/DCF1> for DCF requests

<https://coe.lanl.gov/DCF2> for DCF sites

[https://coe.lanl.gov/APs/DocNum/VAR\\_Prod\\_v0/Forms/1PROD%20All%20Fields.aspx](https://coe.lanl.gov/APs/DocNum/VAR_Prod_v0/Forms/1PROD%20All%20Fields.aspx) for Variance Library

- Click Restart in Allow section after doing above steps for it to take effect, if required.

**NOTE:** The sites added Expire after 30 days, and the process will need to be repeated to Add the page again.



**Internet Explorer compatibility**

**Let Internet Explorer open sites in Microsoft Edge** ⓘ Incompatible sites only (Recommended) ▾

When browsing in Internet Explorer you can choose to automatically open sites in Microsoft Edge

**Allow sites to be reloaded in Internet Explorer mode** ⓘ Allow ▾

When browsing in Microsoft Edge, if a site requires Internet Explorer for compatibility, you can choose to reload it in Internet Explorer mode

**Internet Explorer mode pages** Add

These pages will open in Internet Explorer mode for 30 days from the date you add the page. You have 3 pages that'll automatically open in Internet Explorer mode.

Page	Date added	Expires	
<a href="https://coe.lanl.gov/APs/DocNum/VAR_Prod_v0/Forms/1PROD%20A">https://coe.lanl.gov/APs/DocNum/VAR_Prod_v0/Forms/1PROD%20A</a>	4/19/2022	5/19/2022	🗑️
<a href="https://coe.lanl.gov/DCF1">https://coe.lanl.gov/DCF1</a>	4/21/2022	5/21/2022	🗑️
<a href="https://coe.lanl.gov/DCF2">https://coe.lanl.gov/DCF2</a>	4/21/2022	5/21/2022	🗑️

**ENGINEERING PROCESSES NEWS**

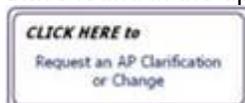
 From CoE Eng Process Manager Sarah Murdock, [smurdock@lanl.gov](mailto:smurdock@lanl.gov):

The following Administrative Procedures have been amended or created and posted to the COE Administrative Procedures [SharePoint site](#). If you have been identified as requiring additional training on this AP you will see an assignment on your UTrain “to do” list.

<b>AP-341-517, Design Change Form</b>	
Issued 4/4/2022	VAR-10527- DCF Exception for Simple ML-4 Electrical Branch Circuits Thanks to requestor Mike Richardson, POC Sarah Murdock.
Effective 4/4/2022	
<b>AP-341-611 r4, System Design Descriptions</b>	
Issued 4/13/2022	<ul style="list-style-type: none"> <li>▪ Add requirement for three-year review and reaffirmation or revision of SDDs to meet LANL-IM-2021-5022 that came from a DNFSB assessment observation. Assessment observation communicated on March 11, 2021, staff report.</li> <li>▪ Updated format to meet updated AP template.</li> <li>▪ Updated SDD Signature Sheet to reflect type of review.</li> <li>▪ Added Administrative Change and Reaffirmation direction to procedure.</li> </ul>
Effective 5/13/2022	
<b>AP-341-627 r2, Design Coordination</b>	
Issued 4/4/2022	<ul style="list-style-type: none"> <li>• Clarified the purpose and scope of this AP to apply to the design phase coordination between design groups.</li> <li>• Updated reference to SD330</li> <li>• Updated AP format to match newest template format.</li> <li>• Add ERFI form, AP-341-627-FM03, to procedure and a log.</li> <li>• Supports closure of LANL-IM-2022-6397</li> </ul> Briefings are being created. CSEs at next CSE Quarterly Forum (May 5), other roles later.
Effective 5/4/2022	
<b>AP-341-704 r0, Quality Verification of Items and Services (NEW!)</b>	
Issued 3/15/2022	Provides the steps and requirements to implement the quality verification process for non-safety related Quality Risk Level (QRL) 1 and 2 items and/or services as described in P841-1 <i>Quality Procurements</i> . The AP may also be used for QRL-3 in the event the supplier does not meet the quality program requirements for the procurement. This quality verification process is only required for new or replacement items intended for use in ML-3 or ML-4 SSCs or for activities on SSCs with QRLs as noted earlier. There will be no formal training for this new AP, but it is expected that the user will read through the full procedure before use.
Effective 4/14/2022	

For questions or concerns regarding APs, please contact Sarah at 667-7788.

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](#).





### DOE TECHNICAL STANDARDS ACTION

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

DOE-STD-1269-2022	<a href="#">Air Cleaning Systems in DOE Nuclear Facilities</a>	Standard	EHSS - Office of Environment, Health, Safety and Security	Apr 15, 2022
DOE-HDBK-1169-2022	<a href="#">Handbook for Use with DOE-STD-1269-2022</a>	Handbook	EHSS - Office of Environment, Health, Safety and Security	Apr 15, 2022

### NATIONAL STANDARDS ACTION

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

Document number: [ACI 347R](#), **Guide to Formwork for Concrete**

Publication Date: **July 2014**; Reaffirmed/Reapproved Date: **(R 2021)**

### 2021 IAPMO Mechanical and Plumbing Codes (UMC & UPC)

These have been added to the subscription in conjunction with LANL adopting an ESM revision (see above). The 2015 versions should continue to be available for the remainder of 2022 since they are required for new projects until that time (and projects underway since July 2018). As such, if the 2015 edition(s) are included in a project's code of record, those involved in the design or review of same should download a copy for personal use now.

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Document number: [NFPA 780](#), **Standard for the Installation of Lightning Protection Systems**

Publication Date: **2023**

Type of Change: **Complete Revision**

**LANL NOTE:** As with all NFPA from IHS, we can only read online, not download. ESM Ch 7 governs LPS; ESM Ch. 1 Z10 directs latest edition of this one.

### **MSS DOCUMENT CHANGES**

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

**Operation and Maintenance Criterion** and related Preventative Maintenance Instructions (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.

#### **PMI: 735-A: Wet Standpipe Systems Quarterly/Semiannual Inspection and Testing**

- Initial issue.

#### **PMI: 735-B: Wet Standpipes Systems Annual Inspection and Testing**

- Initial issue.

#### **PMI: 735-C: Wet Standpipes Systems Five-Year Inspection and Testing**

- Initial issue.

Access to all such documents

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

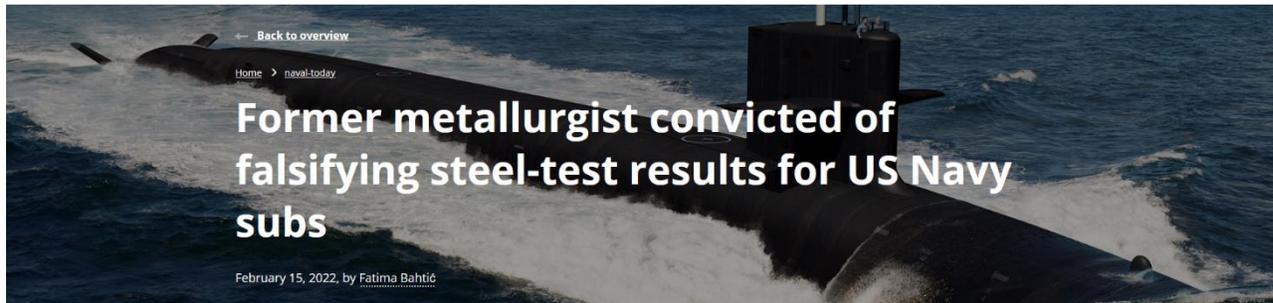
If you have issues with SharePoint site use Internet Explorer or Edge to access them.

## WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Maybe more quality than engineering. Traitorous?

Now the subject of a DOE OPEXShare (<https://doeopexshare.doe.gov/lesson/38359>, requires reg)

<https://www.navaltoday.com/2022/02/15/former-metallurgist-convicted-of-falsifying-steel-test-results-for-us-navy-subs/>



February 15, 2022, by Fatima Bahtić

**The former director of metallurgy at Bradken Inc. Elaine Thomas was sentenced to two and a half years in prison and must pay a \$50,000 fine after pleading guilty to falsifying test results that measure the strength and toughness of steel used in US Navy submarines.**

Initially, the 67-year old woman faced up to 10 years in prison and a \$1 million fine when sentenced by US District Judge Benjamin H. Settle. The judge sentenced Thomas noting that even after an exhaustive Navy investigation, “*we don’t know the full ramifications of this fraud.*” Prosecutor Nick Brown said Thomas betrayed the Navy’s trust for 32 years, “*knowingly placing its sailors and military operations at risk.*”

According to records filed in the case, Bradken is the US Navy’s leading supplier of cast high-yield steel for naval submarines. Bradken’s Tacoma foundry produces castings that prime contractors use to fabricate submarine hulls.

The US Navy requires that the steel meets certain standards for strength and toughness to ensure that it does not fail under certain circumstances, such as a collision. For 30 years, the Tacoma foundry (which was acquired by Bradken in 2008), produced castings, many of which had failed lab tests and did not meet the navy’s standards, according to the statement. Back in June 2020, Bradken entered into a deferred prosecution agreement, accepting responsibility for the offense and agreeing to take remedial measures.

Elaine Thomas, who was a director of metallurgy at that time, falsified test results to hide the fact that the steel had failed the tests. Thomas falsified results for over 240 productions of steel, which represent a substantial percentage of the castings Bradken produced for the navy, the statement reads.

On the other hand, the court filings indicated there is no evidence that Bradken’s management was aware of the fraud until May 2017. At that time, a lab employee discovered that test cards had been altered and that other discrepancies existed in Bradken’s records.

Bradken also entered into a civil settlement, paying \$10.8 million to resolve allegations that the foundry produced and sold substandard steel components for installation on US Navy submarines.

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Even though there was no indication that the submarine hulls failed at any time, the authorities said the navy has spent nearly \$14 million, including 50,000 hours of engineering work, to assess the parts and risk to the 30 submarines affected.

*“Our Sailors and Marines depend upon high quality products and services from our contractors to safely and effectively meet the worldwide mission of the Department of the Navy,”* US Navy Secretary **Carlos Del Toro** said.

*“We will continue to insist that our contractors must meet these high standards.”*

### **LAST MONTH'S UPDATE TOPICS**

**Miss an issue? The archive is at "Monthly Update" on the Standards homepage.**

**Last month's topics:**

- **Training & Qualification**
- **LANL Standards Issued in March or so**
- **Engineering Processes News**
- **DOE Technical Standards Action**
- **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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Tobin Oruch, Engineering Standards Mgr

Los Alamos Nat'l Lab, Conduct of Eng Program Office

(505) 665-8475 [oruch@lanl.gov](mailto:oruch@lanl.gov) <http://engstandards.lanl.gov/>

*Please consider the environment before printing this or any email*

(With the support of many others in the CoE Office. Contacts for

them: <https://int.lanl.gov/org/ddops/aldfo/engineering-services/conduct-engineering/index.shtml> )