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**ENGINEERING STANDARDS UPDATE**

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

**Topics this month:**

- **Help Still Wanted!**
- **Training & Qualification**
- **LANL Standards Issued in July**
- **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.**

Last month's Update went out when seemingly half the workforce was on a July Fourth vacation. If they eventually did read it or those that worked that week read it more closely than usual, then the standards universe probably balanced in a kind of Santa Fe, yin and yang sort of way. If you lost the Update sent July 6, back issues are at: <https://engstandards.lanl.gov/updates.shtml>



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**HELP STILL WANTED!**

In case you missed this last month, we're still looking for a standards person. Some of the details again:

**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](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.

**TRAINING & QUALIFICATION**

First, a congratulations to **David Bingham**, LANL's Welding Program Administrator and SME. He recently earned ASNT Level III Certification in Basic, Visual, and Leak Testing. These are non-destructive testing methods used with welds and other situations where soundness must be confirmed. Level III is the highest possible; such people are able to write technique procedures and qualify others to use them, and LANL has just half a handful of them.

**COE Lesson Plan Templates and Use** (target audience is people developing courses)

When: Tues, August 10 at 2pm

Where: WebEx

How to sign up: UTrain #52970 COE Lesson Plan Templates and Use

A WebEx invite and copies of the templates/training material will be emailed to all registered participants on Monday August 9, 2021

Questions: Stan Hayes

**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 training

specialist Yolanda Trujillo at 664-0118 or yjtrujillo@lanl.gov with Z number. Registrants will receive Webex instructions prior to start.

**Online National Standards**

Virtual seminars at noon MDT:

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



**LANL STANDARDS ISSUED IN JULY**

**Engineering Standards Manual ESM STD-342-100**

ESM-Chapter	Section	Title	Rev.	Date	Summary
Chapter 1 - General	210	Attachment 1: Systems List	-	7/26/2021	Thanks to Charlie Nuss
Chapter 5 - Structural	III	Nuclear SSCs Design and Analysis Requirements	10	7/19/2021	Added Hilti KB-TZ2 to App. A; new App. H for design for same. Crane guidance expanded in App E. Thanks to former POC Glen Pappas.
Chapter 16 - IBC Program		Reference: Listing of Approved IBC Testing Agencies and Fabricators	-	7/28/2021	Thanks to Tim Donovan, Chief Inspector. (Ch. POC: Tobin Oruch)

**Master Specs STD-342-200**

Spec Number	Rev.	Spec Title	Effective	Summary of Latest Revision
01 3300	6	Submittal Procedures	7/29/2021	Added Submittal Waiver FM01-W; added APROOVE and eliminated FM03 Submittal Review Form. Thanks to Tadz Kostrubala, Karen Marsh, Amy Gitnick
05 0521	4	Post-Installed Concrete Anchors - Nuclear Safety	7/19/2021	Added KB-TZ2, and made a few other minor changes resulting from Hilti's recent review of the doc. Thanks to former POC Glen Pappas.
07 2400	3	Exterior Insulation and Finish Systems	7/28/2021	General updates and confirmations. Thanks to POC Scott Richardson.
26 0519	8	Low Voltage Electrical Power Conductors and Cables	7/27/2021	<ul style="list-style-type: none"> <li>• Added THWN-2 to MC cable insulation types at 2.3</li> <li>• Fixed 2.4 C.; had stated 12 AWG or larger, now states 1 AWG or larger. (A is for up to 6AWG, B is from 6 to 1, C is from 1 and larger)</li> <li>• Added allowance to handle conductors below 14 degF. at 3.2.C (from lessons learned at TA03 substation)</li> <li>• Added 'feeder' to 3.4 J. This allows branch circuit conductors to be spliced without getting permission from the Chief Electrical Inspector</li> <li>• Fixed table references for torque tables at 3.6.k.1.</li> <li>• Brought 3.9E more into alignment with 3.9B.</li> </ul> Thanks to POC Eric Stromberg, Al Torrisi.

**DOE TECHNICAL STANDARDS ACTION**

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

DOE-STD-1196-2021, Derived Concentration Technical Standard

A Derived Concentration Standard (DCS) is a radiological quantity used in the development and conduct of environmental and public radiation protection programs implemented at DOE sites and for DOE activities. DCS values are reference concentrations of radionuclides in environmental media that provide a basis for the control of effluent releases from DOE facilities. <https://www.standards.doe.gov/standards-documents/1100/1196-astd-2021>

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**NATIONAL STANDARDS ACTION**

LANL's [IHS Eng Workbench](#) online codes & standards subscription news. We use all these, effective immediately for new projects.

Document number: API STD 1104, **Welding of Pipelines and Related Facilities**

Publication Date: **July 2021**

Type of Change: **Complete Revision**

Several ASHRAE standards are under continuous maintenance; they issue addenda and we follow them.

Document number: ASHRAE 55 ADD F, **Thermal Environmental Conditions for Human Occupancy**

Publication Date: **6/30/2021**

Type of Change: **Addenda/Addendum**

ESM Ch. 1 Z10 says errata (fixing of errors) must be followed.

Document number: ASHRAE 55 ERTA, **Thermal Environmental Conditions for Human Occupancy**

Publication Date: **7/7/2021**

Type of Change: **Errata/Erratum**

Document number: SJI LOAD TABLES, **Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders**

Publication Date: **July 2020**

Type of Change: **Complete Revision**

Document number: UL 508, **UL Standard for Safety Industrial Control Equipment**

Publication Date: **3/30/2018**

Type of Change: **Complete Revision**

Homeschool day

1:

Wondering how I  
can get this kid  
transferred out  
of my class.

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**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\\_\\_\\_\\_\\_](https://logistics.lanl.gov/MSS/_layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx_____)

**O&M 302 Rev 3: Utility Tie-Ins**

- Updates to template text, org names, acronyms, content organization.
- Added to Scope: storm water, sanitary reclamation, and condensate systems. Specified Rad Liquid Waste tie-ins are not within scope.
- Changed Engineering Requirements: Implement use of ESR system and incorporate revision 7 of PD340.
- Changed several processes from using Engineering Change Notice (form) to using Complete Design Package OR Design Change Form.
- Added requirement to submit test results to ES-UI System Engineer(s), for disinfection, pressure, and electrical testing.
- Added requirement for additional electrical tie-in authorization per Form 63-00-180.4 *Energizing Utility Service Disconnect*.
- Changed several Basis Statements.
- Added several in-text references pointing to additional information

Directly: [https://logistics.lanl.gov/MSS/\\_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/302.pdf&action=default](https://logistics.lanl.gov/MSS/_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/302.pdf&action=default)

**O&M 303 Rev 2: Utility Disconnects**

- Updates to template text, org names, acronyms, content organization.
- Scope - Added: storm water and sanitary reclamation systems Removed: FP systems. Specified Rad Liquid Waste is not in scope
- Changed Engineering Requirements: Implement use of ESR system and incorporate revision 7 of PD340
- Changed several processes from using Engineering Change Notice (form) to using Complete Design Package OR Design Change Form
- Added requirement to submit test results to ES-UI System Engineer(s), for disinfection, pressure, and electrical testing
- Changed several Basis Statements

- Added several in-text references pointing to additional information

Directly: [https://logistics.lanl.gov/MSS/\\_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/303.pdf&action=default](https://logistics.lanl.gov/MSS/_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/303.pdf&action=default)

### **PMI 404-A Rev1: Gas Furnaces or Unit Heaters Inspection, Testing, and Maintenance**

- General updates to align with O&M 404, Rev 4
- Added ITM for physical supports, air ducts, vent pipe, & air-intake pipe
- Removed ITM for general condition, air filters, & air supply openings

Directly: [https://logistics.lanl.gov/MSS/\\_layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx](https://logistics.lanl.gov/MSS/_layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx)

### **MSS-GUIDE-001 R10: Facility Maintenance IWD Writer's Guide**

- Revised the hierarchy of Notes, Warnings and Cautions to comply with Professional Procedures Association (PPA) guidelines.

Directly: [https://logistics.lanl.gov/MSS/\\_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/MSS-GUIDE-001.pdf&action=default](https://logistics.lanl.gov/MSS/_layouts/15/WopiFrame.aspx?sourcedoc=/MSS/Policy%20%20Procedures/MSS-GUIDE-001.pdf&action=default)

### **PMI 511-A Rev 1: Lead Acid Battery Bank Inspection, Testing and Maintenance**

- Replaced “Other Systems” with “Optional Standby Systems”
- Updated ITM items to match O&M 511, Rev2
- Combined all inspection and tests into 3 new forms
  - 511-A.008, Lead-Acid Battery Bank Monthly PM
  - 511-A.009, Lead-Acid Battery Bank Quarterly PM
  - 511-A.010, Lead-Acid Battery Bank Annual PM
- Deleted Forms .007 - .020
  - 511-A.007, Weekly Valve Regulated Lead Acid Battery Bank Inspection, Level 1 & 2 Systems
  - 511-A.008, Monthly Vented Lead Acid Battery Bank Maintenance, Level 1 & 2, and Other Systems
  - 511-A.009, Monthly Valve Regulated Lead Acid Battery Bank Maintenance, Level 1 & 2 Systems
  - 511-A.010, Monthly Valve Regulated Lead Acid Battery Bank Maintenance, Other Systems
  - 511-A.011, Quarterly Vented Lead Acid Battery Bank Maintenance, Level 1 Systems
  - 511-A.012, Quarterly Vented Lead Acid Battery Bank Maintenance, Level 2 & Other Systems
  - 511-A.013, Quarterly Valve Regulated Lead Acid Battery Bank Maintenance, Level 1 Systems

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- 511-A.014, Quarterly Valve Regulated Lead Acid Battery Bank Maintenance, Level 2 & Other Systems
  - 511-A.015, Annual Vented Lead Acid Battery Bank Maintenance, Level 1 Systems
  - 511-A.016, Annual Vented Lead Acid Battery Bank Maintenance, Level 2 and Other Systems
  - 511-A.017, 2-Year/5-Year Vented Lead Acid Battery Bank Maintenance, Level 2 & Other Systems
  - 511-A.018, 6-month Valve Regulated Lead Acid Battery Bank Maintenance, Level 1, 2, & Other Systems
  - 511-A.019, Annual Valve Regulated Lead Acid Battery Bank Maintenance, Level 1 Systems
  - 511-A.020, Annual Valve Regulated Lead Acid Battery Bank Maintenance, Level 2 & Other Systems
  - Added new form .001, *Individual Cell Electrolyte Level Data Sheet*
  - Changed *Load Test Data Sheet* from Form .001 to .007

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

### **PMI 511-B Rev 2: Nickel-Cadmium Battery Bank Inspection, Testing, and Maintenance**

- 511-C (Level 2) and 511-D (Other Systems) were deleted and all ITM steps combined with this PMI into **3 forms**
  - 511-B.007, *Lead-Acid Battery Bank Monthly PM*
  - 511-B.008, *Lead-Acid Battery Bank Quarterly PM*
  - 511-B.009, *Lead-Acid Battery Bank Annual PM*
- Replaced “Other Systems” with “Optional Standby Systems”
- Updated ITM items to match O&M 511, Rev2
- Added 3 new data sheets to meet requirements
  - 511-B.003, *Individual Cell Lug to Cable Connection Data Sheet*
  - 511-B.004, *Inter-cell Connection Resistance Data Sheet*
  - 511.B.005, *Inter-cell Connection Torque Data Sheet*

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



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

If your workspace smells like a kitchen or bathroom(!), you might want to see where the HVAC air intake is...



Nasty code violation unless exhaust fan is removed/sealed inside. Piping the condensate away instead of draining onto the roof is good but not offsetting.

Thanks to EPD Mechanical Team Leader Todd Smith. He says this wasn't at LANL, thankfully.

**LAST MONTH'S UPDATE TOPICS**

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

- **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 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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