
ENGINEERING STANDARDS UPDATE

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

Topics this month:

- **Engineering Services DL, Building Official, Fire AHJ Changes**
- **Training & Qualification (Building Codes!)**
- **Engineering Processes News**
- **LANL Standards Issued in August**
- **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.

Just picked up my social distance support animal.



Bonnie Berry
August 15 at 3:50 PM · 43

ENGINEERING SERVICES DL, BUILDING OFFICIAL, FIRE AHJ CHANGES

Readers outside of ALDFO may be interested in recent ES-Div changes affecting projects, operations, pressure safety, and the like. Soon after the below email, the NNSA Field Office (NA-LA) formally delegated the Fire AHJ duties to Jason K and the LBO and Owner roles to Jason A so running on all cylinders (soon, will kids say “all batteries”?).

Sent: Tuesday, July 27, 2021 4:02 PM
To: Aldfo-all@lanl.gov
Subject: Engineering Services Division Leadership

This message is sent on behalf of Derek Gordon, Senior Director of Nuclear Safety Programs - ALDFO

Today, July 27, 2021 is the last work day for Jim Streit, ES-DL. Starting tomorrow, he will be on vacation status until that runs out, then he will retire. His list of accomplishments and contributions to this Laboratory are too numerous to repeat or summarize. We all know him as the engineer and leader he is. Truly, I can barely remember what life was like at the Laboratory without him, every day he was here, he helped make it better. Thank you for everything Jim, we all wish you the best.

With Jim's pending retirement, Jason Apperson has agreed to serve as the acting ES-DL. He is the current Deputy DL and has been at the Laboratory over 15 years all in Engineering Services. Jason Apperson will also serve as the Laboratory Building Official.

Jason Kemp, ES-FP Group Leader will take over the role of Fire Protection Authority Having Jurisdiction. Jason Kemp took over as Group Leader a couple years ago and has a wealth of fire protection experience and knowledge both at the Laboratory and in industry.

Please support both Jasons in their new roles while we go through the selection process.

Derek Gordon

In other ES-Div news:

Per Mike Richardson on August 2:

Zahid Khan will serve as the acting ES-EPD Group Leader, effective 02 Aug 2021, for 60 days. Mr. Khan supported Engineering Services in multiple roles over the past 11 years and is currently serving as the ES-LFO Group Leader. Please provide Mr. Khan your support as we find a permanent replacement.

Also, Thad Hahn is retiring at the end of September. Wishing him well! twahn@lanl.gov, [231-1146](#)



Alistair Hunter
March 3 · 
Moderna Art

Don't miss the word play just above 😊

TRAINING & QUALIFICATION

Two topics:

Online National Standards

9/16, **IEEE Xplore**, Virtual seminar at noon MDT: <https://lanl.libcal.com/event/7987179> (Webex) [IEEE is mostly for electrical eng types]

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

Registering for UTrain Courses: Go to UTrain, search on course, select and enroll. Disenroll if you have to bail. AEs register using token (CryptoCard) or contact ES training specialist Yolanda Trujillo at 664-0118 or yjtrujillo@lanl.gov with Z number. Webex format registrants will receive instructions prior to start.

Building Codes

Three building code courses are being taught in September, focused largely on the International Building Code (IBC) and International Existing Building Code (IEBC), all by Webex. **Anyone outside of ES-Div attending should contact oruch@lanl.gov with course(s) desired to request the Webex instructions.** (Those in ES Division already received the Outlook/Webex invitations on 9/1.)

New this year is a shortened, 3-hour course that's just the high points of the above codes (see UTrain 53116 below). This will satisfy both the IBC & IEBC vendor course requirements in the Design Engineer Qualification Standard (pdf), ESD-QS-011 (pg 17). That being said, the 7-hour-each IBC (53114) and IEBC (53115) courses provide much more depth and either or both should be taken by those who would benefit from same. For example, IBC (53114) by project engineers, architectural, and fire and IEBC (53115) by project engineers and architects; perhaps both by managers and team leaders.

The longer courses teach the 2021 codes (LANL expects to adopt in 2022) but will also touch on major differences between those and the 2015s that we follow today.

UTrain 53116 Building Codes Overview (Virtual)

Choice of two sessions: Thurs Sept 9 (9am-12) or Thurs Sept 16 (1-4pm) -- 3 contact hours

This course will review the key building codes used in the design of projects. It is designed for those engineers and others that don't normally work directly with the International-series' Building Code (IBC), Fire Code (IFC), or Existing Building Code (IEBC). It will, however, provide a general overview of the structure and basic content of these codes, highlight the electrical, mechanical, and civil requirements, and explain how they interact with other codes on these matters.

NOTE to ES-EPD: This course will satisfy both the IBC & IEBC vendor course requirements in the Design Engineer Qualification Standard (pdf), ESD-QS-011 (pg 17); however, 53114 and 53115 provide much more depth and should be taken by those who would benefit from same. For example, IBC (53114) taken by project engineers, architectural, fire) and IEBC (53115) by project engineers and architects; both by managers and team leaders.

UTrain 53114 -- 2021 International Building Code (IBC) Overview (Virtual)

Tues Sept 7--Thurs Sept 9, 1-4 pm each day (7 contact hours over 3 part-days)

Focuses on the basic concepts of the 2021 IBC. These concepts provide a basis for the correct utilization of the code. A clear understanding of the identified requirements allows the code user to apply the IBC in specific situations and helps to build an understanding of the intent of the code. This course will also help the code user to correctly locate code requirements. It will also provide a basis for the correct use and application of the code. It will address the organization of the code and how it relates to the IBC family of International Codes (I-Codes). There will be some discussion of changes from the 2015 IBC that LANL uses now. Objectives include: Explain the fundamental provisions of the code; identify the intent of the building code; describe the common provisions applicable to design of commercial buildings; comprehend and discuss the use of passive and active fire protection; identify how life safety and egress issues are addressed in design and construction; identify how the health and safety of occupants is safeguarded with weather protection and interior environment controls.

NOTE: This Webex course will span 3 consecutive days, so please block your calendars for all 3 days. While you must attend all days to receive credit, you need only register for the first day.

UTrain 53115 -- 2021 International Existing Building Code (IEBC) Overview (Virtual)

Tues Sept 21--Thurs Sept 23, 1-4 pm each day (7 contact hours over 3 part-days)

Focuses on the basic concepts of the 2021 IEBC. These concepts provide a basis for the correct utilization of the code. A clear understanding of the identified requirements allows the code user to apply the IEBC in specific situations and helps to build an understanding of the intent of the code. This course will also help the code user to correctly locate code requirements. It will also provide a basis for the correct use and application of the code. It will address the organization of the code and how it relates to the IBC family of International Codes (I-Codes). There will be some discussion of changes from the 2015 IEBC that LANL uses now. Will cover applicability and relationship of IEBC to buildings undergoing repair, improvements, additions or change of use. Major topics addressed include: Non-structural provisions, regulation of additions, alterations and repairs; change of occupancy; compliance alternatives.

NOTE: This Webex course will span 3 consecutive days, so please block your calendars for all 3 days. While you must attend all days to receive credit, you need only register for the first day.

Code Training – Dates are in Sept 2021

All Times are MDT

M	Tu	W	Tr
6 Labor Day	7 1-4 pm IBC Overview	8 1-4 pm IBC Overview	9 9:00-noon Overview of the Codes 1-4 pm IBC Overview
13	14	15	16 1-4 pm Overview of the Codes
20	21 1-4 pm IEBC Overview	22 1-4 pm IEBC Overview	23 1-4 pm IEBC Overview

Note: Because of the per-student cost to LANL, only LANL employees are eligible to attend.



ENGINEERING PROCESSES NEWS

Per CoE Eng Process 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-341-502 R7, Management Level Determination	
Issued 8/31/2021, effective 9/30/2021	Course 55428
<ul style="list-style-type: none"> • Updated attachments, forms, and instructions to match Revision 12 of SD330, <i>LANL Quality Assurance Program</i>, change in ML-3 screening criteria. • Updated Attachment A by adding new procedures and deleting cancelled procedures. • Clarified management level determination of software. • Added Section 4.0 to AP-341-502-FM01, <i>SSC Management Level Boundaries</i> • Incorporated CIR-2020-001.0 in Implementation section. 	

If you have been identified as requiring additional training on an AP you will see an assignment on your UTrain “to do” list.

Other news: AP-341-405, Identification and Control of Technical Baseline in Operating Facilities, r6 approval is expected this month.

Users: 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](#).



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

Chapter	Section	Title	Date	Comments
Chapter 5 - Structural	II	Reference: ES-EPD-21-032, Risk Category for Explosive Facilities at LANL webposted (default is RC II).	8/9/2021	Thanks to Emma Starrett et al.
Chapter 5 - Structural	III	Reference: Hilti KB-TZ and KB-TZ2 Anchor Supply/Selection Guidance (TA-55 only)	8/9/2021	Thanks to former POC Glen Pappas, Ben Winter, and the TA55 warehouse folks
Chapter 16 - IBC Program	Refs	Reference: Organization Chart	8/19/2021	See article above on LBO, AHJ, etc.
Chapter 17 - Pressure Safety	ADMIN-4, Inspection and Testing	Posted: VAR-10478 , Mitsubishi City Multi VRF PURY-P TLMU-A and YLMU-A R410A Pressure Testing	8/3/2021	Thanks to Charles Smith and Ari Swartz, POC
Chapter 17 - Pressure Safety	NASME	Reference: When listed components cannot be used, reputable manufacturers as discussed in NASME-1-a, b, etc. (xls) (LANL only)	8/19/2021	Questions to Ari Swartz, POC

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

Section	Section/Title	Rev.	Date
200	Template Instructions - README	-	8/23/2021
200	Digital Signature Title Block Template	-	8/23/2021
200	Digital Signature Title Sheet Template	-	8/23/2021

DOE TECHNICAL STANDARDS ACTION

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

Not a standard but an Order, and for authors of requirements documents mostly:

DOE O 414.1D Chg 2 (LtdChg) Quality Assurance was added to the Triad contract App B List of Applicable Directives on July 7, 2021 (via mod 70).

There were several other changes, mostly only of interest to the security community.

<https://int.lanl.gov/org/ddops/oma/prime-contract-management/prime-contract/assets/docs/P00070.pdf> (see last page for changes)

[DOE-STD-5506-2021, Preparation of Safety Basis Documents for Transuranic \(TRU\) Waste](#)

This Standard provides analytical assumptions and methods, as well as hazard controls to be used when developing Safety Basis documents for transuranic (TRU) waste facilities in the U.S. Department of Energy (DOE) Complex. This Standard complements the safe harbor methods in Appendix A to Subpart B of 10 CFR Part 830 (Nuclear Safety Management). It also provides supplemental technical information that is specific to TRU waste operations, so Federal employees and contractors can formulate, implement, and maintain safety bases for TRU waste operations in a consistent manner that is compliant with 10 CFR Part 830, Subpart B, requirements. The information contained in this Standard is intended for use by all Department of Energy (DOE) and National Nuclear Security Administration (NNSA) sites and all contractors for DOE-owned or DOE-leased, Hazard Category 1, 2, or 3 nuclear facilities or nuclear operations that involve generation, handling, storage, and remediation of TRU waste. It may also be applied to these facilities having low-level waste. Supersedes DOE-STD-5506-2007, dated 4-4-2013.

NATIONAL STANDARDS ACTION

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

Just an FYI on NFPA 72 since ESM Ch 2 Fire Protection Att 1 – *Adopted Editions of NFPA Fire Protection Codes, Standards, and Recommended Practices* directs the use of the 2016 edition of this for now ...

Document number: [NFPA 72 AMD 4](#), National Fire Alarm and Signaling Code

Publication Date: 4/15/2021

Type of Change: Amendment [for NFPA codes/stds LANL follows, we also follow AMDs]

...and the 2017 edition of this:

Document: [NFPA 80A](#), Recommended Practice for Protection of Buildings from Exterior Fire Exposures

Publication Date: 2022

ASHRAE FUNDAMENTALS 2021 (IP = Imperial/English units) -- Complete Revision

Document number: ASHRAE FUNDAMENTALS IP CH 3, FLUID FLOW

Document number: ASHRAE FUNDAMENTALS IP CH 4, HEAT TRANSFER

Document number: ASHRAE FUNDAMENTALS IP CH 5, TWO-PHASE FLOW

Document number: ASHRAE FUNDAMENTALS IP CH 7, FUNDAMENTALS OF CONTROL

Document number: ASHRAE FUNDAMENTALS IP CH 8, SOUND AND VIBRATION

Document number: ASHRAE FUNDAMENTALS IP CH 9, THERMAL COMFORT

Document number: ASHRAE FUNDAMENTALS IP CH 10, INDOOR ENVIRONMENTAL HEALTH

Document number: ASHRAE FUNDAMENTALS IP CH 11, AIR CONTAMINANTS

Document number: ASHRAE FUNDAMENTALS IP CH 12, ODORS

Document number: ASHRAE FUNDAMENTALS IP CH 15, FENESTRATION

Document number: ASHRAE FUNDAMENTALS IP CH 17, RESIDENTIAL COOLING AND HEATING

LOAD CALCULATIONS

Document number: ASHRAE FUNDAMENTALS IP CH 21, DUCT DESIGN

Document number: ASHRAE FUNDAMENTALS IP CH 22, PIPE DESIGN

Document number: ASHRAE FUNDAMENTALS IP CH 25, Heat, Air, and Moisture Control in **Building Assemblies—Fundamentals**

Document number: ASHRAE FUNDAMENTALS IP CH 26, Heat, Air, and Moisture Control in **Building Assemblies—Material Properties**

Document number: ASHRAE FUNDAMENTALS IP CH 27, Heat, Air, and Moisture Control in **Building Assemblies—Examples**

Document number: ASHRAE FUNDAMENTALS IP CH 28, Combustion and Fuels

Document number: ASHRAE FUNDAMENTALS IP CH 29, Refrigerants

Document number: ASHRAE FUNDAMENTALS IP CH 30, Thermophysical Properties of **Refrigerants**

Document number: ASHRAE FUNDAMENTALS IP CH 32, Sorbents and Desiccants

Document number: ASHRAE FUNDAMENTALS IP CH 33, Physical Properties of Materials

Document number: ASHRAE FUNDAMENTALS IP CH 36, Climate Change

Document number: ASHRAE FUNDAMENTALS IP CH 37, Moisture Management in Buildings

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.

If you have issues on the SharePoint site use Internet Explorer to access them. 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)

PMI 724-E R3: Preaction Automatic Sprinkler Systems Six-Month Inspection and Testing

2020-0135 IM updates made:

- Deleted Step 1.4.
- Added 2 new Notes in Section 1, Pre-Maintenance Activities:
 1. Sending signals to EOC.
 2. Use Fire Alarm Control Panel In/Out of Service Checklist, if panel must be returned to service.
- Updated steps and table in Section 2.4, Alarm Device Inspections.
- Added a Main Drain Test (Section 9.0) including control valve lock inspection in Step 9.8-9.9.
- Added new step, "Is the valve enclosure/riser room maintaining a minimum temperature of at least 40°?" to Section 2.6, Valve Enclosures.
- Updated 724-E.002, Preaction Valve List with new instructions and updated table.

Updated steps to match steps in 721-C, Wet Automatic Sprinkler 6-Month.

Removed Section 2.5, Hydraulic Design Information Sign which is an annual requirement.

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

PMI 725-E R3: Deluge Automatic Sprinkler Systems Six-Month Inspection and Testing

2020-0135 IM Updates made:

- Added a Note on sending signals to EOC in Section 1, Pre-Maintenance Activities.
- Updated steps and table in Section 2.4, Alarm Device Inspections.
- Updated Main Drain Test, Section 9.0, including new step on control valve locks.
- Updated 725-E.002, Deluge Valve List with new instructions and updated table.

Updated steps to match steps in 721-C, Wet Automatic Sprinkler 6-Month.

Removed Section 2.5, Hydraulic Design Information Sign which is an annual requirement.

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

PMI 726-E R5: Dry Automatic Sprinkler Systems Six-Month Inspection and Testing

2020-0135 IM Updates made:

- Added a Note on sending signals to EOC in Section 1, Pre-Maintenance Activities.
- Updated steps and table in Section 2.4, Alarm Device Inspections.
- Added new step, "Is the valve enclosure/riser room maintaining a minimum temperature of at least 40°?" to Section 2.6, Valve Enclosures and removed Steps 2.6.5-2.6.9.
- Added a Main Drain Test (Section 9.0).
- Updated 726-E.002, Dry System Control Valve List with new instructions and updated table.

Updated steps to match steps in 721-C, Wet Automatic Sprinkler 6-Month.

Removed Section 2.5, Hydraulic Design Information Sign which is an annual requirement.

Direct: [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)

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Because engineers are sometimes bad spellers, I looked to see if this woman was an engineer—ok, more engineer conduct than not following formality of engineering. Can't really say either way, so maybe just bad conduct. Allegedly...but apparently.

Woman arrested for using fake 'Moderna' vaccine card during Hawaii trip

https://www.usatoday.com/story/travel/news/2021/09/01/woman-arrested-hawaii-after-showing-fake-moderna-vaccine-card/5682888001/?utm_source=usatoday-Travel&utm_medium=email&utm_campaign=baseline&utm_term=list_article_thumb&utm_content=8872UT-E-NLETTER07



LAST MONTH'S UPDATE TOPICS

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

- **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**

Wishing you a fun and safe Labor Day holiday!

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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