

## **ENGINEERING STANDARDS UPDATE**

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

### **Topics this month:**

- **Larry Goen Retiring**
- **When Good Conduct of Engineering Isn't Followed**
- **Training & Qualification**
- **LANL Standards Issued in January or so**
- **Engineering Processes News**
- **Engineers Week and Feb 20**
- **DOE Technical Standards Action**
- **National Standards Action**

The LANL Engineering Standards: <http://engstandards.lanl.gov/>

### **LARRY GOEN RETIRING**

Last month Larry announced a March retirement. He's been the Site Chief Engineer and Engineering Services Division Leader for nearly seven years, was the CoE Office Director for three before that, and has been involved in most things structural/seismic here going back to the early 1990's when I first met him. These important and often overlapping roles have been challenging at times to say the least, so while this is clearly a big loss for the institution, it surely means a heavy weight will be lifted from his shoulders. I'll miss his wisdom and hands-on approach to handling issues as I'm sure many of us will. You might wish him the best if you see him before March 22.

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

Last month's snow load topic proved prescient since, a few days later, Sonic's carport sagged under the weight of multiple snowfall accumulation. (Have you *eaten* there? Probably some grease buildup also;-)



[Full story/Photo credit: Los Alamos Reporter](#)

Also, by coincidence Larry Goen had just presented to the Directorate on snow loads. A couple of photos showing related problems that occurred at LANL follow; an excerpt of his technical content below that.





#### Engineering Standards

- Today's standards require structures like these to be designed considering:
  - 100 year return period loads, LANL ground snow load = 16 psf – site specific (rule of thumb is 10" of snow = 1" of water = ~5 psf)
  - Snow on ice/heated vs unheated enclosures (range of 15% reduction to 30% additional load)
  - Drifting due to changes in roof elevations/slopes (balanced vs unbalanced loads)
- Even if design loads are applied or exceeded by some margin, failures are not expected given the factors of safety included on capacities.
- Temporary structures (3 years or less) are required to meet gravity (including snow) load requirements.

#### TRAINING & QUALIFICATION

**CGD Overview & Preparers – New date:** Wed, Feb 27th in RLUOB Rooms 4501/4502  
**Required** if you need to do commercial grade dedication for nuclear service per AP-341-703; take one or both courses as needed.

8-10 a.m. Course 30726, CGD Overview for Managers, CGD Preparers, others.

Prereq for 30727.

10:00 a.m.-5:00 p.m. Course 30727, required for CGD preparers, and reviewers (like IQPA).

Taught by Rick Sarwal.

REGISTERING for UTrain Courses: Go to [UTrain](#), search on course (or click link above), select and enroll. Disenroll if you have to bail. AEs can also register; use token (CryptoCard) or contact T&Q coordinator Yolanda Trujillo at 665-5696 or [yjtrujillo@lanl.gov](mailto:yjtrujillo@lanl.gov) with Z number.

**In other T&Q news,** Ruby Molinar et al. revised a couple of Qual Standards. These can be found with on the newly revamped CoE T&Q [webpage](#).

**ESD-QS-006,R1 Conduct of Engineering Project Engineer Qualification Standard Jan 2019 minor changes**

Updated organization names to reflect TRIAD transition; removed NHHO as organization that tracks Continuing Training on section 5.7; removed attachment 9.3, LANL Qualification/Certification Documentation; removed content prohibiting the use of reference material during Oral Checkout; removed note on Section 9.4; added attachment 9.6, LANL Project Engineer Oral Checkout Study Guide.

**CSE-QS-004,R3 Cognizant System Engineer –Process Engineer Qualification Standard**

Updated organization names to reflect transition to TRIAD; corrected typographical and style errors; removed inactive item 26389 *Safety Basis Overview* and replaced with item 37365 *Safety Basis for Engineers*.

**LANL STANDARDS ISSUED IN JANUARY OR SO**

In January:

ESM	Section	Title	Rev.	Date	Notes
Chapter 7 - Electrical	G4010	G4010, Site Electrical Distribution	4	1/15/2019	Thanks to POC Eric Stromberg and his tech committee

...and already in February, thanks to structural specs POC Glen Pappas (and doc goddess Christina Salazar-Barnes):

Collection	Section	Title	Rev.	Date	Notes
LANL Master Specs	03 3021	Reinforced Concrete—High Confidence	3	2/5/2019	Streamlined Nonstructural/Cosmetic Defects/Deficiencies at 3.14 and created new article Structural Concrete Repair at 3.15 (and updated VIT numbering and added related hold point for structural damage review at 1.6.I.15). Invoked new 03 6021, Grouting – High Confidence (versus 03 6000, Grouting) throughout. Added Subcontractor and Testing Agency responsibilities for strength-test-cylinder curing at 3.1 and 3.16.
LANL Master Specs	03 6000	Grouting	4		Added concrete repair material, plus other minor changes based on 03 6021 (high confidence) development (which was first issued concurrently with r4 of 03 6000).
LANL Master Specs	03 6021	Grouting -- High Confidence	0		New!

**ENGINEERING PROCESSES NEWS**

The following Administrative Procedures have been revised and posted on the [SharePoint site](#):

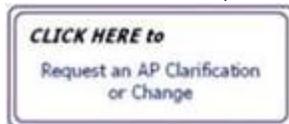
<b>AP-341-517-R2</b>	<b>Design Change Form</b> RR Course 44243	<b>Issued:</b> 1/15/19
<b>AP-341-611-R3</b>	<b>System Design Descriptions</b> RR Course 44266	<b>Issued:</b> 1/25/19

Always ensure you are working to the latest revision being implemented by your facility.

For AP training questions, contact [Yolanda Trujillo](#) at 665-5696.

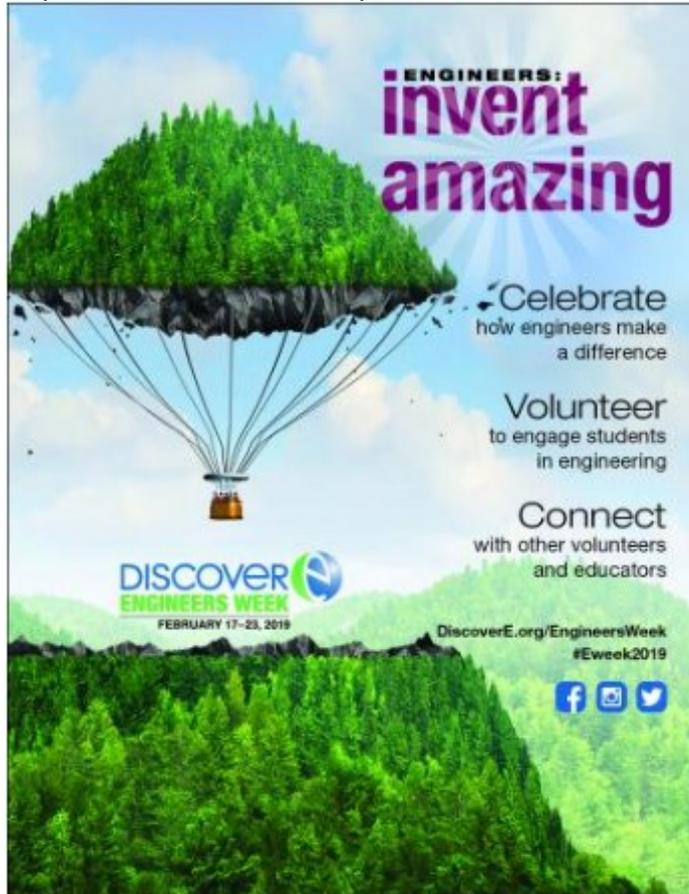
For questions about an AP, please contact Jeff Fauble at 665-5832. Jeff is here every other week or so serving as the Eng Processes Manager. Most anytime time he's reachable by email at [jfauble@lanl.gov](mailto:jfauble@lanl.gov); if emails to him bounce, the sender needs to click the Outlook "To" button and select his name from the LANL directory. After that first time, the autocomplete option will work fine.

When ideas for AP change come, please enter them in the SharePoint database. Use the fancy live button below, same one that's found in the upper right of the Processes [homepage](#).



## ENGINEERS WEEK AND FEB 20

Repeat from last month's Update:



From Heidi Hahn:

“As part of National Engineers Week 2019, February 17-23, James Owen, Associate Laboratory Director for Weapons Engineering (ALDW), invites employees and students/Postdocs to share information about recent LANL R&D engineering projects at the 9th annual poster session to be held in conjunction with a keynote address and presentation of the Postdoctoral Publication Prize on February 20, 2019 at the J. Robert Oppenheimer Study Center - Santa Clara Gallery and Jemez/Cochiti Conference Room. This year’s national theme “Invent Amazing” celebrates you—engineers, engineering students, and technicians—and all of the amazing things you do every day to make a difference in our world.”

You may want to block your calendar for the above, which is typically 1–4 p.m. Also, in New Mexico, E-Week is Feb. 19-25, with the NMSPE [big event](#) on Friday, Feb 22, which last year included 2 PDHs of ethics training. Such training is required of NM professional engineers.

## DOE TECHNICAL STANDARDS ACTION

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

For the safety basis folks: DOE-STD-1027-2018 Chg Notice 1, [Hazard Categorization of DOE Nuclear Facilities](#) [Chg revised a number of equations in original]

## NATIONAL STANDARDS ACTION

LANL's [IHS](#) online codes & standards subscription reports these changes:

Just errata this month. ESM Ch 1 Section Z10 says "Errata (correct errors) to any document...are mandatory regardless of contract award date or code of record," so the above applies—assuming the standard edition is part of the project's code of record.

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

Publication Date: 1/29/2019

Type of Change: Errata/Erratum

### I-Codes:

PDF users, if you have the very latest printing available from IHS, most known errors are fixed in that pdf, but there may still be some newly discovered ones. Those with older pdfs should check the edition notice (aka copyright page, which is on the back of the title page) against the latest printing info in table below. If you don't have the latest pdf, you should download it (then log out, then dump the old pdf).

Paper users (older, bound books from ICC or homemade printings) should download the errata listing from table below—and possibly print any/all revised pages you'd use and keep stuffed in the book. New files have been recently posted for the errata lists for the IECC and IEBC.

Affected I-Code	This info also posted under ESM Chapter:
IFC-2015 errata: As of 1/10/2019, Fourth Printing is latest. PDF users, download from <a href="#">IHS</a> . Errata are <a href="#">here</a> (from ICC errata site <a href="#">here</a> ).	2 - Fire Protection
IECC-2015 errata: As of 1/10/2019, <b>Third</b> Printing is latest. PDF users, download from <a href="#">IHS</a> . Older hardcopy users, errata are <a href="#">here</a> (from ICC errata site <a href="#">here</a> ).	14 - Sustainable Design
IBC-2015 errata: As of 1/10/2019, Third Printing is latest. PDF users, download from <a href="#">IHS</a> . Older hardcopy users, errata are <a href="#">here</a> (from ICC errata site <a href="#">here</a> ).	16 - IBC Program
IEBC-2015 errata: As of 1/10/2019, Fifth Printing is latest. PDF users, download from <a href="#">IHS</a> . Older hardcopy users, errata are <a href="#">here</a> (from ICC errata site <a href="#">here</a> ).	16 - IBC Program

## LAST MONTH'S UPDATE TOPICS

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

- **When Good Conduct of Engineering Isn't Followed—Snow Loads**
- **Training & Qualification**
- **Engineers Week and Feb 20**
- **LANL Standards Issued in December**
- **Engineering Processes News**
- **DOE Technical Standards Action**
- **National Standards Action**

The views expressed in this email are not necessarily those of my employer.  
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