

ENGINEERING STANDARDS UPDATE
Special Government Shutdown Edition

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

Topics this month:

- **New Engineering Project Delivery Group**
- **Standards Program Report Card**
- **DOE O 420.1C Update**
- **Records Center Move**
- **Fire Safety Month**
- **Firestopping and Post-Installed Anchor Course**
- **Systems Engineering Master's Degree**
- **Nuclear Workers Behaving Badly**
- **LANL Standards Issued in September**
- **Processes Changes**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

The Standards Homepage: <http://engstandards.lanl.gov/>

I thought I'd better get this sent out in case we're all furloughed.

NEW ENGINEERING PROJECT DELIVERY GROUP

Effective Monday September 30, the Engineering Services Division reorganized, combining the Project and Design Engineering groups into the Engineering Project Delivery Group to facilitate better interaction, cooperation, and ownership. Per DL Larry Goen: "The acting group leader will be Mike Clemmons and Doug Volkman will be the acting deputy. Mike's role is the group lead for design and project engineering activities and will remain the primary contact with Project Management. Doug will be supporting Mike with his emphasis on the design activities. Mike will be splitting time at Pajarito Complex and the Design Engineering Office. The EPD group leader (EM-5) and deputy group leader (EM-4) job ads have been closed and applicants are currently being screened for interview consideration." This makes Mike a Deputy Building Official for the Engineering Standards Manual Chapter 16 IBC Program now as well.

STANDARDS PROGRAM REPORT CARD

As a program manager, I include FY13 Standards POC accomplishments with my own in Perform. How cool is that? So, in case you're interested:

Revised sections or issued sitewide variances to the ESM in Chapters 1, 4, 5, 13, 14, 16, and 17. Revised 27 Master Specification Sections, plus issued one new (Chemical Resistant Coatings for Gloveboxes)

Issued two new Standard Details (anchorage of MCCs and 3-phase transformers)

Contributed to Engineering Quality Improvement Plan

I know, yada yada.

DOE O 420.1C UPDATE

Discussed at length in [January](#) and again in June, the latest Facility Safety order revision was added to the Contract effective Sept 26. We've tabulated the many tasks (mostly ESM changes) needed to implement the order in a plan and the POCs have begun that work, but it will take several months since there are some complex issues involved. In the meantime, new projects should not include 420.1C in their code of record until notified to do so, since multiple projects individually attempting to implement 420.1C prior to us developing the institutional approach together with NNSA would be a train wreck.

RECORDS CENTER MOVE

The IRM Document Control and Records Management Service Center at TA-63-121 has undergone a diaspora, per a recent email to ES-ALL from Caryn Gates. The majority -- Germaine Romero, Michelle Silva, and Caryn -- are now located at TA-00-0726-237 (with ES-DO), phone 7-4696. Most of their records went into Documentum, the NSSB, or offsite.

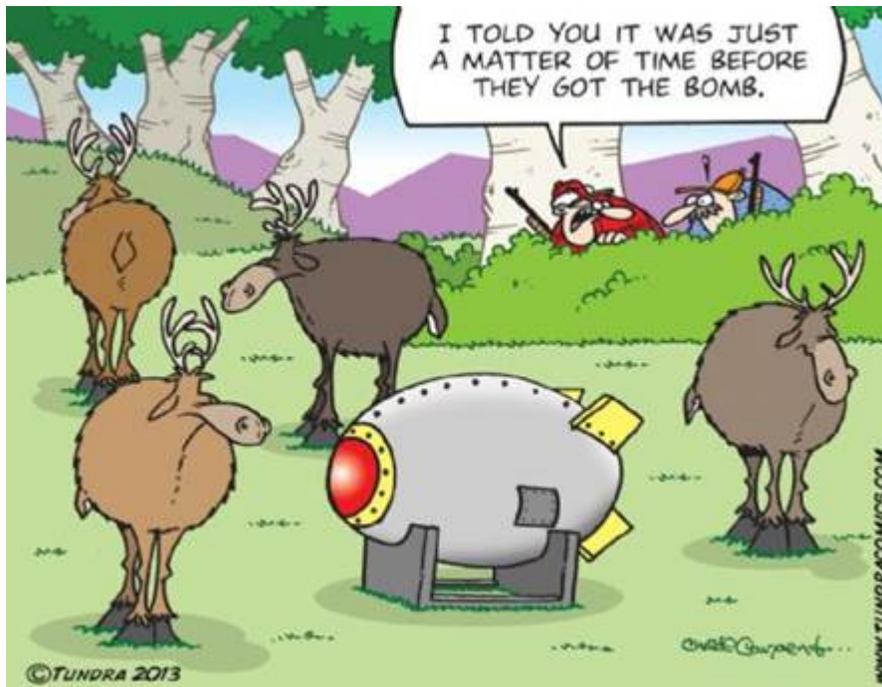
FIRE SAFETY MONTH

The NFPA's Fire Prevention Week (10/6-12) theme is "Prevent Kitchen Fires;" of course, they mean uncontrolled ones, not routine use of gas stoves or romantic dinner candles. October is the BSA's "Fire Prevention Month," though they also mean uncontrolled fire since elders spend a lot of time teaching boys how to kindle campfires (better not be romantic).

Why October? Myth-busting excerpt from Wikipedia:

The **Great Chicago Fire** was a [conflagration](#) that burned from Sunday, October 8, to early Tuesday, October 10, 1871, killing hundreds and destroying about 3.3 square miles (9 km²) in [Chicago, Illinois](#).^[1] Though the fire was one of the largest [U.S.](#) disasters of the 19th century, the rebuilding that began helped develop Chicago as one of the most populous and [economically](#) important American cities...[like us after Cerro Grande?]. The traditional account of the origin of the fire is that it was started by a cow kicking over a lantern in the barn owned by Patrick and [Catherine O'Leary](#). In 1893, Michael Ahern, the *Chicago Republican* reporter who wrote the O'Leary account, admitted he had made it up as colorful copy.^[3] The barn was the first building to be consumed by the fire, but the official report could not determine the exact cause.^[4]

Maybe it should be Hunter Safety Month...



FIRESTOPPING AND POST-INSTALLED ANCHOR COURSE

Firestopping and structural P-I anchors are two specialty components that are normally critical to life safety and tricky to do correctly, so they trigger a boatload of QA. They're governed by the IBC's Chapter 17 on special inspection and thus require CM-CE inspection per ESM Chapter 16. Fire stopping installers need to be certified by UL or FM per [07 8400](#). Anchor installers at LANL will need to be certified in a few years when we adopt ACI 318-11 via IBC 2012 or 2015. As such, Daniel Lopez ("Construction Inspector Extraordinaire," July [Update](#)) is scheduling a half-day Hilti training/certification class for post-installed anchors and firestopping the first week of December in the Otowi. Good for installers, inspectors, and engineers. RSVP to d_lopez@lanl.gov.

SYSTEMS ENGINEERING MASTER'S DEGREE

Note, systems engineering is about requirements management, not supporting operations (system eng). Excerpt from ADE Engineering Blog [here](#):

The Naval Postgraduate School's Department of Systems Engineering is pleased to announce a two-year Systems Engineering Non-Resident Master's degree program with a System of Systems focus commencing January 2014. The program is open to qualified uniformed officers, federal employees and defense contractors.

NUCLEAR WORKERS BEHAVING BADLY

Thanks to Anthony Cuaron for being sure I saw this one in Linda Collier's *NEW LESSONS LEARNED AND OPERATING EXPERIENCES*, September 12, 2013.

Please don't do these kinds of things at LANL – I live downwind.

Excerpt from “INFORMATIONAL: Willful misconduct events interpreted as evidence of poor safety culture [NRC Information Notice [IN 2013-15](#)]”:

The NRC enforcement policy states: “...licensees often take significant actions including the potential for employment termination for the individuals involved in willful misconduct or record falsification...establishing and maintaining an effective safety-culture is essential in helping prevent willful misconduct by ensuring that expectations and consequences are clearly stated and understood by all their employees, contractors and agents.”

Record Falsification – Travelers for Field versus Design Drawings - Shaw AREVA Mixed Oxide (MOX) Services Fuel Fabrication Facility Construction Project (2009)

Record Falsification - Work Order Packages – TVA Watts Bar Nuclear (WBN) Unit 2 Construction Project (2009)

Record Falsification - Work Order Packages – TVA Watts Bar Nuclear (WBN) Unit 2 Construction Project (2010)

Record Falsification – Fire Drill Forms – Dominion Energy Kewaunee, Inc., Kewaunee Plant (2009-2011)

Record Falsification - Shift Check Forms - Southern Nuclear Operating Company, Vogtle Units 3 and 4 Construction Project (2012)

Record Falsification - Hourly Fire Watch Patrols - Southern Nuclear Operating Company, Farley Nuclear Power Plant (2011)

Record Falsification - Radiation Training Examinations - NRC Issues Confirmatory Order to Southern Nuclear, Farley (2013)

Misrepresentation – Display Serial Numbers - Pentas Controls, LLC (2010)

LANL STANDARDS ISSUED IN SEPTEMBER

FY-end is a popular commitment date which explains some of these changes. The biggest improvements are in **bold**.

Eng Standards Manual [STD-342-100](#)

Chapter/Section	Summary of Changes
Chapter 1 – General, Section 100, Standards Administration by Standards Team, Rev. 7	Added variance incorporation guidance; many minor and administrative changes.
Chapter 4 Architectural, Section B Shell	Posted labwide VAR-2013-113 regarding permanent fall protection requirements. Thanks to POC David Carr.

Chapter 13 Welding, Joining, & NDE, Volume 6, WIGN 6-01 Inspector Qualification – Visual, Att. 1, Visual Acuity Record, Rev. 1	Updated the inspector eye tests to require Jaeger 2. Thanks to SME Kelly Bingham et al.
Chapter 16 IBC Program, IBC-GEN General, Rev. 7	Added project determination and hazmat forms as FM1 and FM2, NOV as FM4. Clarified scope, phasing, process, delegated and deferred design, change processing. Updated App A & B. FM1 became FM3, FM2&3 became 5&6.
Chapter 16 IBC Program, IBC-IP Inspection Process, Rev. 7	Clarified need for TIP and issued new Att I template for same. Clarified no need for wind-resisting element SI or SO. Clarified use of shop dwgs for inspection. Apps became Atts with minor changes.
Chapter 16 IBC Approval Listing, Program Org Chart	Updated

Master Specifications [STD-342-200](#)

01 4000 R5 Quality Requirements	Clarified use of TIP and SSI, submittals 1.4.A and B added, C clarified; Exh I template updated.
03 3001 R7 Reinforced Concrete	Incorporated new preapproved LATM Mix 15 replacing Mixes 19 and 44; supersedes related variances VAR-2012-066 and VAR-2013-105. New authors notes on page 1 and App. A first page. For projects in progress, mix 19 and 44 will be allowed. Thanks to POC Glen Pappas, contact him or Doug Volkman with questions.



WSW is September 30 - October 4, 2013. Warms my heart...

PROCESSES CHANGES

The following Administrative Procedures were posted on the Conduct of Engineering Office, [Engineering Processes](#) page in SharePoint in September. Please refer to the notification on these for instructions on training and implementation. For questions about APs, please contact [Gurinder Grewal](#) at 667-3667.

AP-341-620-R2	<i>Review of LANL Produced Design Documents</i> Course #44269	Issued: 9/17/13
AP-341-622-R2	<i>LANL Review of Designs Produced by External Design Agencies</i> Course #47029	Issued: 9/17/13

DOE TECHNICAL STANDARDS ACTIONS

DOE [Tech Stds](#) activity this past month:

DOE-STD-1162-2013: Instrumentation and Control Functional Area Qualification Standard [for Feds]

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED



As if Packers fans didn't have enough woes, on September 25 the Wisconsin DOT closed the Leo Frogo bridge in Green Bay due to a two-foot sag of the roadway and Pier 22. Moral: Occasionally, conditions change inexplicably and bad things happen, but good engineering can reduce the chance to near zero.

Excerpt from sheboyganpress.com:

"Officials would not speculate what caused the steel pylons to sink into the ground. Each pier is supported by two such vertical beams extending 100 feet underground and resting either on rock or another hard layer.

Initial examination at the site showed no sign of trouble with soil conditions, officials said, but soil and many other factors will be scrutinized more closely in the days and weeks ahead.

The Federal Highway Administration has dispatched experts to help the state Department of Transportation determine why the Interstate 43 bridge sagged and what sort of repairs are needed before it can be reopened to traffic.

Officials hope to have a better idea by next week how long the investigation likely will take.

The four-lane bridge could be out of service for months or perhaps even a year, officials have indicated. Traffic detours have led to significant congestion on some surrounding roads.

"Forty-thousand cars a day obviously need to go somewhere," state traffic engineer Randy Asman said Thursday."

LAST MONTH'S UPDATE TOPICS

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

- **National Standard Committee Participation**
- **Nuclear Workers Behaving Badly**
- **LANL Standards Issued in August**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

To request a change to this newsletter's distribution, please contact me.

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