ENGINEERING STANDARDS UPDATE
Trying to Make Standards Exciting Since 2001

This is the monthly newsletter of the LANL Engineering Standards Program. The Standards are mandatory documents that define the minimum design criteria, fabrication, and installation practices for the alteration, repair, and construction of LANL facilities and the programmatic and process equipment within them. [P341]

Topics this month:

- **CGD Video – Best Picture Award**
- **Gas Pains**
- **IBC Program Changes**
- **New Commissioning Chapter !!!**
- **LANL Standards Issued in March**
- **What Happens When Conduct of Engineering Isn't Followed**
- **DOE Technical Standards Actions**

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

CGD VIDEO – BEST PICTURE AWARD

As with defusing bombs (à la "The Hurt Locker"), doing commercial grade dedication poorly can be career limiting or worse (but so is humor gone wrong – I've been finding car bombs scrawled with "prima donna, huh?" for the past month and may clip the wrong wire one day).

To prevent a CGD catastrophe with your nuclear safety system, watch the critically acclaimed CGD Overview that premiered live in February at LANSCE. The course is being posted on Lyle Kerstiens' Engineering Training & Qual page here, and should be fully posted by next week. EDS 52942 will have seven video modules with handouts, and will take 4-5 hours. 3-D glasses not required.

I'd have titled this article "CGD Makeup for You-Know-Who-You-Are" but it sounded more Mary Kay than Oscar and would have made me more enemies.

GAS PAINS

Engineering's Pressure Safety Project has found that LANL has a huge problem in that compressed gas cylinder installations often don't have a relief valve after the cylinder regulator, and it's normally necessary. A link to a Lessons Learned that Deputy Chief Pressure Safety Officer Ari Ben Swartz issued on the problem is here. All of this is driven by 10CFR851 and ESM Chapter 17.

Still on the topic, if you need Compressed Gas Association standards, contact Tim Lopez (timlopez@lanl.gov, 7-1069) or Ben (abswartz@lanl.gov, 5-2279). They have now CGA licenses (access for all from the Library's IHS online service was too pricey).

IBC PROGRAM CHANGES

There were three useful changes this past month. First, ESM Chapter 16 was clarified on when CM-Construction Engineering/Inspection is required to be used. Since navigating the chapter is a minefield, we've also added a VERY POPULAR one-page flowchart to the chapter webpage under IBC-GEN – and even revised it already.

The second change was posting a Listing of Approved IBC Testing Agencies and Fabricators. This listing was formerly integrated with the Institutional Evaluated Suppliers List (IESL). It is near the bottom of the chapter webpage right above the new Building Department Org Chart.

Finally, we also clarified which offsite structural fabrications always require special inspectors in the shop.

This brings us to our **QUOTE OF THE MONTH:**

"No code, no engineering, means death. Hopefully, those lives lost will trigger something."
Kit Miyamoto, California structural engineer who went to Haiti in January to do reconnaissance work

NEW COMMISSIONING CHAPTER !!!

It's a banner day when we launch a new standards program for ensuring safety and quality at LANL. There seems to be a 2-year interval: the Welding, Joining, & NDE Program in 2004; then the IBC Program in 2006; and then the 2008 Pressure Safety Notice and the full chapter last year. Now it's Commissioning.

At LANL, commissioning is the process of ensuring that systems and components of a building or process system are designed, installed, tested, operated, and maintained according to the design requirements of the owner. It does not involve swinging champagne bottles into the new systems.

ESM Chapter 15 only applies to the larger projects – those directed by the Construction Management Division and major modifications including all International Existing Building Code Level 3 alterations (over 50% of building area affected), new buildings and additions, transportables, and other projects selected by the Design Authority Representative.

Smaller projects not subject to Chapter 15's scope but in Hazard Category 2 or 3 (nuclear) or High/Moderate Hazard non-nuclear facilities must still perform post-modification testing; see AP-341-801, Post-Modification / Post-Maintenance Testing.

LANL's Commissioning Authority ("The Commish") is Jim Bodnar, Construction Management/Startup Group Leader, jtbodnar@lanl.gov, 6-2375. The alternate POC is Vernon Haywood, vvhaywoo@lanl.gov, 4-0119.

LANL STANDARDS ISSUED IN MARCH

Engineering Standards Manual http://engstandards.lanl.gov/ESM_Chapters.shtml

Chapter 15: Commissioning Rev. 0	Initial issue.
Chapter 16: IBC-GEN Rev. 4	Clarified scope and applicability, LBO approved listing versus IESL (4.1.h); revised regarding SI for seismic resisting (5.3)
Chapter 16: IBC-IP Rev. 4	Clarified need for in-shop seismic- and wind-resistance inspection regardless
Chapter 16: IBC-FAB Rev. 4	Clarified regarding seismic resisting
Chapter 16: IBC-TIA App.B Rev.4	Revised periodic qualification requirements
Chapter 16: Posted flowchart, approved listing, organization chart	

LANL Master Specifications http://engstandards.lanl.gov/specs.shtml

07 5213.13 R0 Atatic-Polypropylene Modified-Bitumen Roofing, Cold-Applied	New Spec requested by LANL roofing program.
07 5216 R2 Styrene Butadiene Styrene Modified Bituminous Membrane Roofing	Major revision, reorganized spec format, added sustainability requirements, added substrate boards, insulation, vapor retarder and cover board requirements, deleted cold applied specs.
07 5217 R0 Styrene Butadiene Styrene Modified-Bituminous Membrane Roofing, Cold-Applied	New spec for SBS roofing, cold applied.
13 3419 R2 Metal Building Systems	Complete rewrite to add interior build-out and meet current code.
21 1313 R3 Wet-Pipe Sprinkler Systems	Multiple changes through-out. For more details see the CENG DCRM Representative
21 1316 R3 Dry-Pipe Sprinkler System	Multiple changes through-out. For more details

	see the CENG DCRM Representative
21 1319 R3 Preaction Sprinkler System	Multiple changes through-out. For more details see the CENG DCRM Representative
21 1326 R3 Deluge Fire-Suppression Sprinkler Systems	Multiple changes through-out. For more details see the CENG DCRM Representative
21 1339 R3 Foam Water Systems	Multiple changes through-out. For more details see the CENG DCRM Representative
23 1123 R3 Facility Natural Gas Piping	Added controls for purging indoors based on CSB recommendations.
33 3200 R3 Wastewater Utility Pumping Stations	Minor editorial changes and updates.

DOE TECHNICAL STANDARDS ACTIONS

New or Revised DOE Tech Stds this past month:
DOE-STD-1192-2010, Vulnerability Assessment Standard (access directions)

WHAT HAPPENS WHEN CONDUCT OF ENGINEERING ISN'T FOLLOWED

Tilt-down construction? Soil-structure interaction gone wild? Explanation at http://drx.typepad.com/psychotherapyblog/2009/12/from-the-mailbag.html

LAST MONTH'S UPDATE TOPICS

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

- **Standards for Prima Donnas this Thursday**
- **CGD for Prima Donnas**
- **Men in Black**
- **IBC for All**
- **LANL Standards Issued in February**
- **What Happens When Conduct of Engineering Isn't Followed**
- **DOE Technical Standards Actions**

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

Tobin Oruch, Engineering Standards Mgr
Los Alamos Nat'l Lab, Conduct of Eng Program Office
TA-16-200 M/S P948 ph (505) 665-8475 fx 667-5405
oruch@lanl.gov http://engstandards.lanl.gov/
P please consider the environment before printing this email