ENGINEERING STANDARDS UPDATE

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

Topics this month:

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

STANDARDS CHANGES ROADSHOW THIS MONDAY, APRIL 6, 1:30, MSL

Since we've revised part or all of nearly every Engineering Standards Manual chapter since last August, Joni Weamer thought the main authors should present a summary of what's changed to everyone that might be affected. We'll also preview a few upcoming changes. We'll do this this coming Monday, April 6, from 1:30-3:00 or so in the MSL Auditorium (TA-3-1698). Everyone with a badge is invited and parking is easy. You can just show up, but if you'd like to request handout(s), email clsalazar@lanl.gov by late morning Monday.

STANDARDS INTRO COURSE WED, APRIL 15, 8 A.M., MSL

The roadshow above is perfect if you've had the all-day Engineering Standards Intro Course 24140 in the past and want an update. But if you haven't had my Intro course it's highly recommended that you take it this month since **I don't plan to teach it again this year**. It provides familiarity with national and LANL engineering standards for anyone performing, reviewing, or managing design activities. Many LANL engineers and designers are required to take it, and outside AEs are encouraged to attend. Enroll (or disenroll) online in UTrain or contact Yolanda Trujillo at 665-5696 or yjtrujillo@lanl.gov. Enrollees as of April 8 will be sent a link to the handout to print 4-6 slides per single page, front and back, for note-taking needs. After that, write to Yolanda for the link after you've signed up.

IBC 2015 AND 420.1C – ADOPTED!

Discussed last month, LANL has now adopted the 2015 International Building Code by way of an ESM Chapter 16 IBC Program revision in March. The Structural Chapter was also revised in March to implement IBC 2015 and DOE O 420.1C Chg 1, Facility Safety through a lot of excellent work by Glen Pappas and also Nathan Yost With these revisions, all future design efforts will fully implement 420.1C (most 420.1C-affected ESM chapters were revised in September 2014 and Fire was revised back in 2013).

The Library's IHS subscription now has the 2015 (and only the 2015) I-Codes, but savvy readers saved the 2009's as suggested last month and won't bother me for them later.

SUBMITTALS – REDONE!!

Also changed last month is how LANL manages submittals mandated in specifications. As noted a month ago, historically we weren't very clear on how much the Design Agency could reduce the LANL Master Spec Section requirements for submittals. Specs are governed by ESM Chapter 1 Section Z10 Attachment F, and its March revision has new direction on when and how designers can – and must – reduce the submittals for LANL-performed work and in other circumstances.

Along with this "submittal reduction" change, we are no longer listing all the required submittals in Exhibit I when contracting. Instead, we've gone back to the pre-LANS (and industry typical) method of summarizing required submittals in a Section 01 3300 schedule so we're consistent for all projects. This is discussed in Z10 Att F which triggered revision of Z10 Att C (30-60-90) and Div 01 Sections 2500, 3300, 7700, and 7839. All were revised March 23 (thanks to Arch POC David Carr for many of these).

POC CHANGES

It's always sad when a long-time Standards POC leaves the Lab. It's also a great loss of institutional knowledge (when not captured in the Standards which we prefer). April is going to be a particularly rough month:

Electrical POC Duane Nizio will be scarce after the end of April, too. ES-EPD Electrical Team Leader Eric Stromberg will become the POC at that point.

Next week is Civil POC Jerry Gonzales' last full week, then it's one-day-a-week until his end-of-May retirement. The double-whammy is that civil standards workhorse Mell Smithour is also retiring at the end of April -- and boy is he cranking out the standards work before then! We'll identify replacement Civil POCs soon.

With Doug Volkman's selection as ES-EPD Deputy Group Leader and all Glen Pappas' work on the Structural chapter revision, Glen has become the Alternate Chapter POC to Mike Salmon (and continues to be the POC for structural specs).

On a personal note, this month marks 15 years of my being Standards Manager. If I don't go insane first, in a year or so it'll be as long as Mike Nicolini, my predecessor and the guy who led the program since the early 1980s inception.

IHS STANDARDS EXPERT TRAINING/PIZZA TUES, APRIL 14

The Research Library is hosting an IHS Standards training/pizza luncheon on Tuesday, April 14, from 11:00-1:00 in the Research Library, Room JRO 1 on the main floor of the Study Center (TA-3-SM-207). **RSVP not required, but for planning purposes, please email Michelle Mittrach mittrach@lanl.gov if you plan to attend.**

IHS Standards Expert™

IHS Standards Expert is the next generation system for standards management. Built from extensive customer feedback, the user interface has been tailored to the specific needs of those who evaluate and use standards, as well as managers responsible for controlling costs and ensuring enterprise-wide access to your company's standards e-workspace.
The training session will cover new enhancements in detail and we will discuss how to link to documents in other applications. Use this Internet-based solution to simplify research for commercial standards, mil-specs, replacement docs, ANSI approved, DoD Adopted and more. This product provides access to over 350,000 standards from more than 450 commercial organizations, in excess of 344,000 military documents and links to National Stock Number information. Learn how to set up Alerts for documents and add Notes.

Maximize Benefits of an IHS Standards Expert Subscription

IHS Standards Expert offers companies a single system of records for standards, with controlled document retrieval and notification of revisions for individual and teams, helping ensure compliance to industry requirements and quality initiatives, as well as improved uptime and operational efficiency.
Managing Favorites is easy, with one-click addition or deletion of an item to your Favorites list. You can also set up personal alerts for items on Favorites list, and add personal notes to a favorite document.
• Create "Watch Lists"
• Share lists with others
• You define who can view/modify lists
• Whole team gets alerts for revisions

Trainer Keith Dorrell will provide an overview on searching IHS Standards Expert, and in-depth training and Q&A on:

- tips for improved search and results display
- customize account settings and user preferences
- advanced filters

LANL STANDARDS ISSUED IN MARCH

Eng Standards Manual STD-342-100

CHAPTER 1 GENERAL	
Section Z10 Att. C Design Deliverable Schedule, 30-60-90/100% Rev. 6	Changes on threshold for use, specs maturity, electrical deliverables, pressure safety, telcom.
Section Z10 Att. F Specifications Rev. 1	New: Critical characteristics per AP-341-607 for ML-1/2; Sect 01 3300 vice Exh I; Exh H coordination; submittal reduction. General reorg.
CHAPTER 5	By POC Mike Salmon:
Section I- General Criteria Rev. 7	Adopted DOE O 420.1C/Chg 1, DOE-STD-1020-2012, IBC-2015, and RP-8; moved Appendix A anchorage material to Section II App A. (thanks to Glen Pappas, author)
Section II - Commercial Design and Analysis Requirements Rev. 9	Major revision. Incorporated IBC-2015, DOE-STD-1020-2012 versus 2002, and anchorage material from Sect I App A. Eliminated historical 10-psf future-floor-DL and, for roofs, 30-psf min roof LL (Lr) and prohibition on LL reduction. Eliminated Commentary companion to this document. (thanks to Glen Pappas, author)
Section III - Nuclear Design and Analysis Requirements Rev. 6	Major revision. Incorporated DOE O 420.1C Chg 1 and DOE-STD-1020-2012 versus 2002. Eliminated historical 10-psf future-floor-DL and, for roofs, 30-psf min roof LL (Lr) and prohibition on LL reduction. Created Apps C & D for LS and DBE loads. (thanks to Glen Pappas, author)
Section IV - Geotechnical Investigations Rev. 6	Incorporation of ASME NQA-1 2008/9, IBC 2015, and CMRR lessons. (thanks to Nathan Yost author, Glen Pappas)
Ch. 13 WELDING, JOINING, & NDE	Updated links to welding database (thanks to POC David Bingham)
CHAPTER 16 IBC PROGRAM	
IBC-GEN, IBC General Requirements Rev. 9	Adopted 2015 I-codes. Refined in-scope definitions and High and Moderate Risk criteria. Added IAPMO ER use. Revised FM1 and 5. Other minor wording changes.
IBC-GEN, Form 1, Preliminary Project Determinations Rev. 2	Updates for submittal reduction, sketch use, sustainable design, NPH category/lookup, 10% cumulative-structural latitude, IEBC 2015
IBC-GEN, Form 5, Building/System Final	Updates for PFITS use, temporary CoO clarity

Inspection Checklist and Certificate of Occupancy Rev. 8	
IBC-GEN, Att. A, LANL Building Code (LBC) Rev. 8	Revised for IBC 2015
IBC-GEN, Att. B, LANL Existing Building/System Code (LEBC)	Revised for IBC 2015
IBC-IP Att. B, Statement of Special Inspection Rev. 10	Major revision for IBC 2015 and standards referenced therein (thanks to Glen Pappas)
IBC-IP Att. G, Structural Observation Report	Revised for IBC 2015 (thanks to Glen Pappas)
IBC-IP Att. H, Subcontractor's Statement of Responsibility	Revised for IBC 2015 (thanks to Glen Pappas)
IBC or IEBC Review Subject Matter Expert List	Updated listing from LBO Deputy (for design reviews, etc.) Joni Weamer

Master Specifications STD-342-200

01 2500 R2 Substitution Procedure	General re-write and re-formatting
01 3300 R4 Submittal Procedure	General re-write and re-formatting, added submittal categories, provided for electronic submission, removed Exhibit I requirements, added associated forms
01 7700 R2 Closeout Procedures	Major Revision; revised submittal requirements, added substantial completion requirements, added sustainable design requirements, revised cleaning requirements
01 7839 R3 Project Record Documents	Major Revision, revised submittal requirements, revised record document descriptions
01 7823 R0 Operation and Maintenance Data NEW!!!!!	Includes O&M requirements formerly in Section 01 3300 Submittal Procedures

ENGINEERING PROCESSES NEWS

Yes, Gurinder Grewal is still working most Tuesdays and Thursdays, and cranking out AP revisions like mad.

AP-341-513-R2	**Qualification of Existing Data**	**Issued** 03/02/15

PRESSURE SAFETY COURSES THIS SPRING

Chief Pressure Safety Officer/ESM Ch 17 POC Ari Ben Swartz will teach two more all-day (8 am – 5 pm) courses this Spring.

First, his Pressure Safety program Overview class is Wednesday, April 8 (for all PSOs and others). Also, his ASME B31.3 Process Piping class is Wednesday, May 13 (meant for PSO Duty Area B and others). Express interest to Ben and training coordinator Yolanda Trujillo ASAP; email them.

For PSO training and qualification the individual must be enrolled in one of the two curriculums by their RLM as follows: PSO Duty Area A: Curricula 11957, PSO: Duty Area A Core; PSO Duty Area B Process Piping: Curricula 11958, PSO: Duty Area B Process Piping

DOE TECHNICAL STANDARDS ACTIONS

DOE Tech Stds activity last month:

DOE-STD-1146-2007 (reaffirmed 2015) General Technical Base Qualification Technical Standard [for the Feds]. Establishes common technical competency requirements for all DOE personnel who provide assistance, direction, guidance, oversight, or evaluation of contractor technical activities that could impact the safe operation of DOE's defense nuclear facilities.

DOE-HDBK-1216-2015 Environmental Radiological Effluent Monitoring and Environmental Surveillance. The DOE radiation protection of the public and the environment is contained within DOE Order (O) 458.1, Radiation Protection of the Public and the Environment. This Handbook describes elements that may be used to implement the radiological effluent monitoring and environmental surveillance requirements in DOE O 458.1.

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Two things this month:

1. Call it lack of construction engineering – or just common sense. Here's a video of earthmoving screw-ups from around the globe – an almost nine-minutes but sure is fun (thanks to retiree Lyle Kerstiens)

2. Below article courtesy Jerry Gutgsell (highlighting his). Bad conduct of engineering was the root cause of the Fukushima catastrophe and such major crisis situations often cause others.

Audit Reflects Failed Efforts At Fukushima Daiichi To Contain Contaminated Water

Nuclear Street News Team
Wed, Mar 25 2015 9:30 AM

An audit in Japan found that more than a third of the $1.6 billion of taxpayer funds spend on cleanup efforts at the crippled Fukushima Daiichi nuclear power station has been wasted, much of it because of the inability to control and contain contaminated water that has been the bane of the cleanup efforts.

Among the expensive items that failed was a $270 million system built by Areva SA that was expected to remove cesium from ground water that was leaking into and then out of three damaged reactors at the plant that was crippled by the Great East Japan Earthquake and the follow up tsunami event in March 2011.

But the equipment was problematic and it was replaced in three months after it treated just 77,000 tons of water, which barely put a dent in the daily flow of groundwater that was flowing in and out of the facility.

Another $150 million was spent on Hitachi GE Nuclear Energy, Toshiba Corporation and Areva equipment built to desalinate seawater that had been used to cool the reactors after the plant's back up cooling system failed after it was hit by the tsunami. But the various desalination equipment purchased all failed within six weeks of being put to work, the report said.

TEPCO put $134 million into the construction of water storage tanks that are already being replaced because of leakage. Another $18 million was invested in seven underground pools built to hold radioactive water. But that system failed also leaked and was abandoned within weeks.

TEPCO has also dropped the plan of creating a wall of ice under the structures in the hopes that a frozen wall would contain the water leaking back into the ground. The company spent $840,000 on that project before realizing the water was not freezing solid enough to become water tight.

Japan's Boards of Audit also said Monday that interest payments on what the government has borrowed to help finance TEPCO's compensation costs would be just above $1 billion, up by $420 million from the estimate made in October 2013.

The Japan News reported that the upper limit for state aid for compensating victims was raised to $80 billion in December 2013 and that, if this maximum compensation package was paid out, it would take 30 years for the government to raise the funds.

At the end of 2014, state aid for TEPCO's compensation payments had reached 4.53 trillion yen or $40 billion, the Japan News said.

TEPCOs compensation costs for evacuating homes and for emotional suffering were estimated at the end of January to reach $46.8 billion. Another $17.5 billion was expected to be spent on decommissioning the facility. In addition $4.4 billion would be needed for disposal of contaminated waste and $8.8 billion would be spent on storage facilities to contain radioactive material, according to an NHK report.

LAST MONTH'S UPDATE TOPICS

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

- **Pi Second**
- **New ESM Communications Chapter!!!**
- **IBC 2015 and 420.1C Adoption this Month**
- **Submittals – Back to the Future**
- **Pressure Safety Courses in March**
- **LANL Standards Issued in February**
- **Engineering Processes News**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

To request a change to this newsletter's distribution, please contact me.
The views expressed in this email are not necessarily those of my employer.

Tobin Oruch, Engineering Standards Mgr
Los Alamos Nat'l Lab, Conduct of Eng Program Office
TA-16-200 M/S F696 ph (505) 665-8475
oruch@lanl.gov http://engstandards.lanl.gov/
Please consider the environment before printing this or any email