

**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:

- **Engineering Societies Fair Feb. 17**
- **Commercial Grade Dedication Course Feb. 23**
- **Hudson Leaving**
- **New CoE Variance Form**
- **LANL Standards Issued in January**
- **DOE Technical Standards Actions**

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

**ENGINEERING SOCIETIES FAIR FEB. 17**

Sure, LANL is a physics lab, perhaps with a capital "P", but people here are increasingly understanding the importance of engineering. There's even an Engineering Directorate (ADE) now.

So, in celebration of National Engineers Week Feb. 14-20 ("Engineers Make a World of Difference") and to promote the advancement of engineering at LANL, ADE is hosting its 1<sup>st</sup> Annual Engineering Societies Fair in the Study Center (Cochiti Room, 2<sup>nd</sup> floor above LANL Library) from 1:30-4 p.m. on Ash Wednesday, Feb. 17. With Mardi Gras just over, it'll have tables instead of floats, free literature instead of beads, cookies instead of King Cakes, and the only New Orleans hurricane you might drink in would be from an ASCE poster on post-Katrina dike repair. Think baccalaureate over bacchanalia.

Still, not to be outdone on acronyms by Gurinder's APs, ADE has invited chapters of IEEE, ASME, MAES, ANS, NSPE, SSE, ASCE, SHPE, NSBE, AISES, and SWE. The Conduct of Engineering Krewe will have a table to highlight engineering disasters and our new SharePoint tool for engineering, and I'll raffle off some IBC code books (but I'd go anyway if only to find out what all these acronyms are).

Actually, this fair could be interesting since it's a myth that engineers are boring. And you don't have to be an engineer to attend – maybe you've just always idolized them (sure, and ABC's next "The Bachelor" or The Bachelorette" will feature an engineer instead of a pilot or cheerleader). But I digress. There should be more publicity in an upcoming LANLtoday and on the Events Calendar, or contact Carol Hogsett 665-4732, [carol@lanl.gov](mailto:carol@lanl.gov).

### **COMMERCIAL GRADE DEDICATION COURSE FEB. 23**

Engineers and QA folks supporting nuclear projects or operating facilities (or wanting to) should plan to attend an all-day course on CGD on Tuesday, Feb 23, 8am – 5pm in the Louis Rosen Auditorium at LANSCE (TA-53, first building on the left). AEs are welcome to attend, too.

This is a not-to-be-missed chance to hear how to legally use off-the-shelf equipment and components when suppliers can't be qualified to NQA-1 and listed on the IESL. It will be taught by Dennis Weaver from the Hanford Waste Treatment Plant -- not the actor from *Gunsmoke* or *McCloud*, but this guy did much of the process development for EPRI so he knows his stuff. Plus, this Weaver is still alive.

Since LANL is being assessed on CGD the same week, I'm guessing we'll have to up our game on this soon after, so DON'T MISS IT. It is course 52942, Commercial Graded Dedication Overview. To register: Once set up in EDS (probably by Tuesday), enter 52942 in the box here <http://int.lanl.gov/training/>, or contact Yolanda Trujillo at 665-5696 or [yjtrujillo@lanl.gov](mailto:yjtrujillo@lanl.gov).

### **HUDSON LEAVING**

I usually write about standards, but this is about a standards-bearer. Paul Hudson, the Group Leader for Construction Engineering/Inspection, will be leaving LANL (gone the next two weeks and for good at the end of February). Associated with this position, he has served as a Chief Inspector of the LANL's IBC Program (ESM Ch 16) since contract change and lately as the Professional Engineer overseeing in-house IBC-related testing capabilities like soils and concrete also. Paul has worked tirelessly to make his group and many elements of the IBC Program a major success story for LANL resulting in a night-and-day improvement in LANL build quality -- along with many other contributions to engineering and project management. We'll miss him.

### **NEW COE VARIANCE FORM**

After about 10 years of faithful service, the Engineering Standards Manual Variance and Exception Form has been retired. Its replacement is LANL Form [2137](#), *Conduct of Engineering Request for Variance or Alternate Method*. The 2137 can be used to petition for doing other than what ANY of the CoE documents require, be it standards, processes/procedures, or training & qual.

For the Standards, ESM Chapter 1 Section Z10 (revised in January) discusses other details of its use in that context.

The form is available from the LANL homepage (look in right frame for Forms), Standards homepage, and ESM Chapter 1 Section Z10. In the Word version, request fields grow to accommodate your hopes and dreams prior to our rejecting them. Just kidding. In fact, on the Pressure Safety Chapter webpage, we've recently posted an alternate method with labwide relevance. So it is possible. LOL.

## LANL STANDARDS ISSUED IN JANUARY

### Engineering Standards Manual [http://engstandards.lanl.gov/ESM\\_Chapters.shtml](http://engstandards.lanl.gov/ESM_Chapters.shtml)

#### **Chapter 1 Section Z10 r8**

Clarified use of addenda and supplements (1.0.B.3); new variance Form 2137; added design review req'ts (8.1), FCN Criteria Document (8.4.B); deleted drawing type table for AP-341-405 (8.4); clarified access to equipment (11.0), spec coordination and development (16.0)

**Chapter 17 Pressure Safety** -- Posted a labwide alternate method and two clarifications

### LANL Master Specifications (update campaign winding down)

<http://engstandards.lanl.gov/specs.shtml>

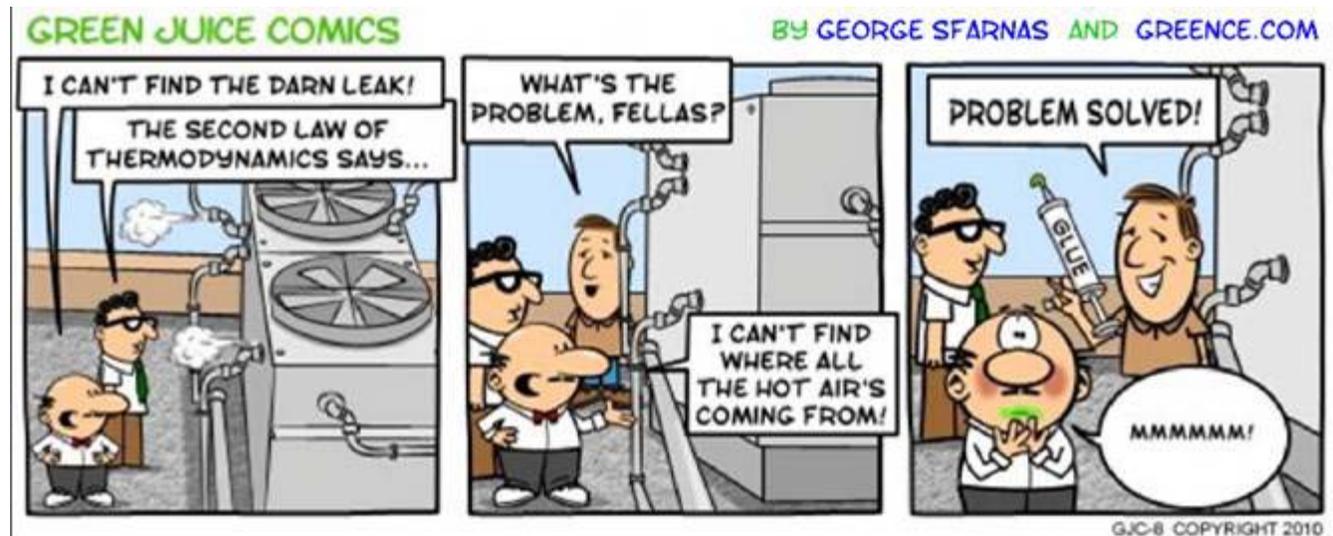
05 5000 R2 Metal Fabrications	Complete rewrite based heavily on the SpecText Template.
05 5350 R2 Gratings and Floor Plates	Complete rewrite, title change reflects inclusion of FRP.
07 2100 R2 Thermal Insulation	General re-write and re-formatting. Incorporated spec section 07 2113 Board Insulation.
07 2113 R1 Board Insulation	<b>Deleted.</b> Incorporated in revised spec section 07 2100 Thermal Insulation, 01/15/10 and individual roofing specifications.
07 6200 R3 Sheet Metal Flashing and Trim	General re-write and re-formatting. Incorporated spec section 07 7123 Manufactured Gutters and Downspouts
07 7123 R1 Manufactured Gutters and Downspouts	<b>Deleted.</b> Incorporated in revised spec section 07 6200 Sheet Metal Flashing and Trim.
10 1405 R2 Signage, Exterior	Complete rewrite with submittal requirements reduced, references updated and reformatted to SectionFormat.
10 1410 R2 Signage, Interior	Complete rewrite with submittal requirements reduced, references updated and reformatted to SectionFormat.
26 2713 R3 Electricity Metering	Updated product catalog numbers. Changed communications interfaces for digital electrical meters to match three anticipated meter data communications situations; in all cases the specifier is instructed to coordinate with the ES-DE Process and Automation Team.
26 2923 R2 Variable Frequency Motor Controllers	Added requirement for submittal of AFC de-rating and selection calculations. Added requirement for certification for AFCs that must continue to operate after a design earthquake. Added requirement to coordinate features of each AFC with supply circuit, load, and communications protocol. Added Service Conditions article to address altitude, temperature, and seismic conditions. Added requirement to provide spare AFCs for critical systems that are not suitable for operation at full speed through a bypass contactor. Added Project Records article to capture the test reports and certifications required in the Field Quality Control article. Added requirement that AFCs in NEMA 1 enclosures be NRTL-listed for use in air-handling plenums. Clarified in instructions where a 3-contactor bypass should be used. Added instruction coordinate with ES-DE P&A Team to select communications protocol that is compatible with the BAS or process control system. Added requirement that AFC have capability to ride through power dips of up to 10 seconds. Added requirement that AFC meet FCC and IEC 61800-3 RF energy emission limits. Added reference to Section 26 0548 – Vibration and Seismic Controls for Electrical Equipment. Revised Field Quality Control article, and adding requirement to coordinate inspections and tests with Section 26 0813 - Electrical Acceptance Testing. Added Manufacturer's Field Service Article

### **DOE TECHNICAL STANDARDS ACTIONS**

New or Revised DOE [Tech Stds](#) this past month:

DOE-STD-1164-2003 (CN-1) Aviation Safety Officer, Functional Area Qualification Standard [PDF](#)

DOE-STD-1165-2003 (CN-1) Aviation Manager Functional Area Qualification Standard [PDF](#)



### **LAST MONTH'S UPDATE TOPICS**

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

- **Engineering Standards Intro Course Tomorrow**
- **There's an AP for That - Redux**
- **There's an App for That...Spec Number**
- **LANL Standards Issued in December**
- **DOE Technical Standards Actions**

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

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