

## ENGINEERING STANDARDS UPDATE Trying to Make Standards Exciting Since 2001

This is the monthly newsletter of the LANL Conduct of Engineering Office's Engineering Standards Program. The Standards define the minimum technical requirements for the design, fabrication, construction, commissioning, repair, and replacement of both new and existing equipment and facilities, including both maintenance and modification, for programmatic and facility work at LANL [[PD340](#)].

### Topics this month:

- **2011 National Electrical Code**
- **New Flavor of Standard -- CGD**
- **CM Course at KAFB**
- **CoE Quote of the Month**
- **LANL Standards Issued in Dec**
- **What Happens When Conduct of Engineering Isn't Followed**
- **DOE Technical Standards Actions**

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

### **2011 NATIONAL ELECTRICAL CODE**

Starting January 1, design tasks must use the 2011 NEC (NFPA 70) as a result of ESM Chapter 7, Section D5000, Para 2.12-A: "...for electrical design, the current edition of the NEC shall be used starting January 1 of the edition year..."

Non-design activities (e.g., maintenance work), use the 2008 edition per just-released provisional [P101-13](#) Electrical Safety Program, and will likely move to the 2011 when the State does so, perhaps July of this year.

### **NEW FLAVOR OF STANDARD -- CGD**

There's a new kind of standard on the website – a standard commercial grade dedication (CGD) package. CGD is used when a supplier of a nuclear safety item supplier isn't on the Institutional Evaluated Suppliers List (hasn't been fully qualified by LANL Supplier Quality as complying with NQA-1 and specification requirements) or where a subcontractor (under their IESL-approved program) cannot qualify the concrete supplier.

In this case, the CGD package is for reinforced (structural) concrete and must be used when dedicating structural concrete for ML-1 (safety class), ML-2 (safety significant), and, if required by LANL Conduct of Engineering [AP-341-703](#), Item Dedication, those ML-3 defense-in-depth or radiological applications. It was developed by John Ruud, Doug Volkman, and others to address concerns over consistency and adequacy of CGD of this complex product by the Site Chief Engineer Dan Steinberg and the QA Division.

The standard CGD package will work much the same as LANL Master Specifications -- its critical characteristics, verifications, and tests are the minimum for concrete CGD at LANL since LA Transit Mix isn't qualified. The package must be used in addition to the typical QA, testing, and inspection requirements of the specific project specification (based on LANL Master Specification 03 3001), applicable codes/standards including IBC code version (see Engineering Standards Manual [Chapter 16](#)).

The package is co-located with LANL Master Spec Section 03 3001, Reinforced Concrete. Direct link: [IDED-STD-03\\_3001 Reinforced Concrete Commercial Grade Dedication \(CGD\) Package/Traveler](#), Rev. 0, 12/22/10.

### **CM COURSE AT KAFB**

Two-day Configuration Mgmt Course SAF-272V is being taught February 22-23 (Tues/Wed, 8-5) at the DOE National Training Center (NTC) on Kirkland Air Force Base in Albuquerque (no charge), Room NTC-2020. If a project or group wants to train a large number of people, it may be possible to have the NTC teach onsite.

Delivery Method: Instructor-Led

Length: 16 Hours

Description: This course provides the students with an introduction to the content and intent of the information contained in DOE-STD-1073-2003, Configuration Management Program. AUDIENCE: Personnel who will be involved with, or develop and implement Configuration Management.

Goals & Objectives: Upon completion of the course students will be able to describe the following: 1) The objectives of configuration management 2) Configuration management requirements 3) The five elements of the configuration management process 4) Change control.

Maximum Number of Students: 30 (now at 11)

Register through LANL's NTC POC Janet T. Martinez, [janetm@lanl.gov](mailto:janetm@lanl.gov), 664-0269.

### **COE QUOTE OF THE MONTH**

"A scientist can discover a new star, but he cannot make one. He would have to ask an engineer to do that." — *Gordon L. Glegg, British Engineer, 1969*

### **LANL STANDARDS ISSUED IN DEC**

[IDED-STD-03\\_3001 Reinforced Concrete Commercial Grade Dedication \(CGD\) Package/Traveler](#), Rev. 0, 12/22/10 (located under LANL [Master Specifications](#) (STD-342-200) with 03 3001)

### **DOE TECHNICAL STANDARDS ACTIONS**

New or Revised DOE [Tech Stds](#) this past month: None.

### **WHAT HAPPENS WHEN CONDUCT OF ENGINEERING ISN'T FOLLOWED**

BAD:

From the Roanoke Times 12/05/2010 <http://www.roanoke.com/26974/wb/xp-269743>

#### **Blacksburg VA School Officials Knew of Gym's Structural Problems Before Collapse**

".. the district quit hiring engineers to evaluate the gym's widening cracks, and instead asked **custodians** to "continually review areas of concern in our school buildings," according to a school district statement." [emphasis added]

"...Though the bulk of foundation settlement, cracks and wall movement that the reports note occurred in the southwest corner of the gym building, there's no proof that contributed to a main roof truss buckling and rolling off the building's southwest steel column -- almost directly above the long-time problem areas -- and pulling down the rest of the roof Feb. 13...

"...The roof fell because of weak steel, improper welding and poor support at the plate that joined the column and truss, combined with a heavy blanket of snow on the roof, according to Forcon's reports....

More justification for our IBC program in ESM Chapter 16.

JUST SAD:



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

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

- **Electrical Standards Course Next Wed, Dec 8**
- **2011 National Electrical Code**
- **Projects Underway -- Download IBC-2006/IEBC-2006 This Month -- Update**
- **Prime Contract Appendix G Changes**
- **CoE Quote of the Month**
- **LANL Standards Issued in Nov**
- **Why Engineers Don't Write Recipe Books**
- **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.

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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](mailto:oruch@lanl.gov) <http://engstandards.lanl.gov/>

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