

ENGINEERING STANDARDS UPDATE

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

This is the monthly newsletter for the LANL Conduct of Engineering Office's Engineering Standards Program, and a bit more. 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:

- **Size Matters**
- **Professionalism Matters**
- **National Standard Committee Participation**
- **Engineering Processes Changes**
- **CoE Training**
- **LANL Standards Posted in August**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Execution Isn't Followed**

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

SIZE MATTERS

Since the Romans, everyone's liked strong and durable concrete except the D&D folks. Unfortunately, ES-DE structural engineer Kenny Feller recently reviewed a concrete submittal and discovered that the aggregate sizing was out-of-tolerance versus our pre-approved design mix. This might affect durability, and further investigation showed this problem has been ongoing for 15 months. As a result, most concrete work was halted for a week while our supplier and the Lab worked to resolve the problem and prevent recurrence (including testing, 4 NCRs, a variance, a PFITS item, new aggregate, more testing, etc., etc.). Thanks to Doug Volkman, John Ruud, Dan Tepley, spec POC Glen Pappas, and the others involved who know of pozzolans and Portlands and have forgotten more about concrete than I'll ever know.

So, this month my Standards Hero is Kenny for catching what many others missed. Ensuring no good deed goes unpunished, ES-DE will now provide central, frequent review of concrete aggregate test reports and the like for the pre-approved mixes. This is a good thing, since it allowed us to eliminate this submittal requirement for every future project by way of a revision to Section 03 3001 last week, thus saving effort and better ensuring we catch any future problem early.

Love this:

"You may have a great tomato sauce recipe but if you use rotten tomatoes the end result will not be what you expected."

-- Don Toddings, ADPM, 8/30/2012, regarding the concrete problem

PROFESSIONALISM MATTERS

Civil engineers preparing for the PE exam can take NMSPE/UNM overview and review courses in ABQ starting this Wednesday; contact me for details. Or just save all those hours in the car and study at home. Still, looks like a good idea for some, based on the above event; maybe an errors and omissions course also?

NATIONAL STANDARD COMMITTEE PARTICIPATION

Some help LANL by maintaining our Engineering Standards; others help the world. If you're a Lab employee serving on a committee maintaining or writing a national standard **that I'm not aware of**, or you've ceased, please contact me by Fri, Sept. 14. An impressive 45 or so employees do such committee work which I must report to DOE-HQ per the contract. Already on the list:

Mark Anderson
William Atkin
James Baker
Shannon Baker
Michael Bange
William Bearden
Sherri Bingert
Kelly Bingham
David Bowman
Lowell Christensen
Harry J. Clifford
Robert F. Daley
David A. Fry
David P. Fuehne
Milan S. Gadd
Marjorie A. Gavett

Edwin D. Groover
Patrick W. Hochanadel
Daniel Javernick
Benito L. Jacquez
Alan L. Justus
Douglas D. Kautz
Robert A. Keown
Paul Leslie
Sheila A. Lott
Michael W. Mallett
Alexander A. Martinez
Thomas D. McLean
Robert A. Monsalve-Jones
Murray E. Moore
William L. Myers
Glen J. Pappas

Donivan R. Porterfield
Craig E. Rasmussen
Christopher Romero
Mark S. Rosenberger
Scott R. Salisbury
Michael W. Salmon
Thomas E. Sampson
James K. Sprinkle
James R. Streit
Thomas E. Tierney
Lawrence S. Walker
Tom L. Waters
Jeffrey J. Whicker
Tania Van Valkenburg

ENGINEERING PROCESSES CHANGES

One Administrative Procedure revision issued last month: [AP-341-503-R2](#) **Technical Evaluation of Replacement Items**

Also, assessors and assessees (?) rejoice -- the Engineering Program Assessment Document was revised and issued as **CRAD-PD340-R1** (under Links on [Engineering Processes](#) SharePoint page).

For questions about the contents of any of these documents, please contact Eng Processes Program Manager Gurinder Grewal at ggrewal@lanl.gov or 667-3667. For a listing of all APs, visit the Conduct of Engineering Office [Engineering Processes](#) page. Always ensure you are working to the latest revision being implemented by your facility. Be well, do good work, and keep in touch.

"I am, and ever will be, a white socks, pocket protector, nerdy engineer...and I take a substantial amount of pride in the accomplishments of my profession."

-- Neil Armstrong (August 5, 1930 – August 25, 2012), Eagle Scout, pilot, astronaut, engineering professor, etc. in February 2000. The original moon-walker, not the sleepovers-with-boys one.

COE TRAINING

Here's the last scheduled FY12 core class, taught in MSL Auditorium (TA-3-1698, directly across from CMR). **Next up, new CGD AP and training and qual program in the fall/winter, and all the core classes again in the spring.**

DATE	ITEM#	COURSE TITLE	INSTRUCTOR	TIME
Sept 12	43668	Project Engineering Processes	Mike Clemmons	1-5

If UTrain enrollment doesn't work, contact Yolanda J. Trujillo, ytrujillo@lanl.gov, 665-5696 if you wish to enroll, cancel, etc. She'll send email confirmations and reminders.

LANL STANDARDS POSTED IN AUGUST

Webmistress Christina Salazar-Barnes and some of the POCs were as busy as...aw, forget it, that simile's insensitive and I've reached my quota.

[Engineering Standards Manual](#) **STD-342-100**

Chapter 13 – Welding -- Volume 3, Welding Specs
5000-xxxx-HY80/HSLA 100D1.1 Rev. 1
5000-xxxx-HY80/HSLA 100-IX Rev. 1
Chapter 16 IBC Program
LBO Approvals Listing updated

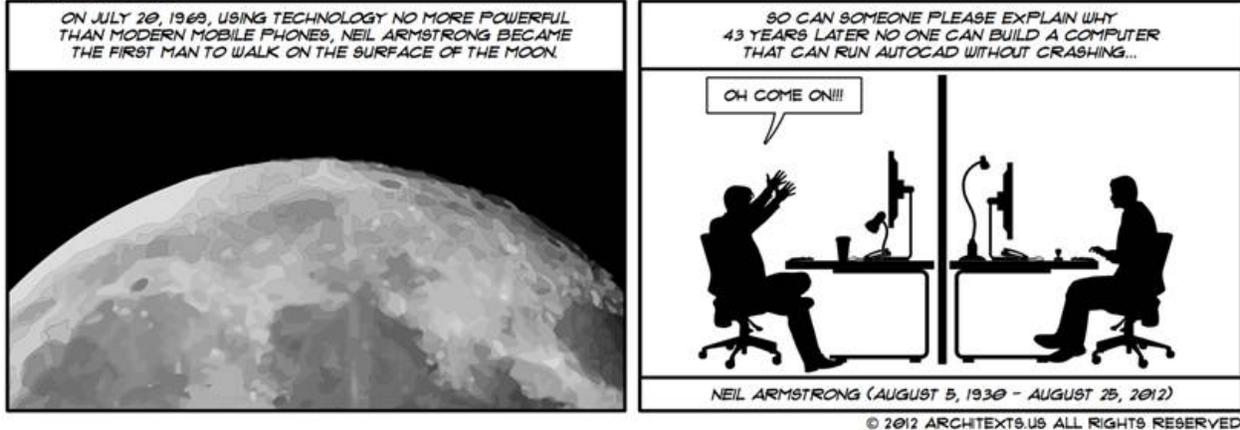
Master Specifications [STD-342-200](#)

03 3001 R6 Reinforced Concrete	Reduced submittal requirements for pre-approved mixes.
03 3001 Variance <u>VAR-2012-139</u> for aggregate (ML-4)	
03 3053 R5 Misc Cast in Place Concrete	Periodic review. Update 1.2.A.1 NMDOT web site and 3.2.A. time notification.
05 1000R5 Structural Metal Framing	Admin changes to 2.3.B, 3.4, 3.9.B.2.b.

05 5350 R3 Gratings and Floor Plates	Admin changes to eliminate reference to 03 1550 and update references to 03 1512 and 03 1534
07 9200 R3 Joint Sealants	General update, added sustainability requirements, updated submittal requirements.
09 6900 R1 Access Flooring	Admin changes to eliminate reference to 03 1550 and update references to 03 1512 and 03 1534
12 3100 R3 Manufactured Metal Casework	Admin changes to eliminate reference to 03 1550 and update references to 03 1512 and 03 1534
22 0813 R6 Testing Piping Systems	Clarification of the requirement for a LANL test inspector
22 0816 R3 Disinfection of Potable Water Piping	Periodic review. Revisions to 1.2.A. due to contractor personnel being dismissed and 1.3. added for Submittals and requirements, due to lack of appropriate personnel.
26 0529 R4 Hangers and Supports for Electrical Systems	Admin changes to eliminate reference to 03 1550 and update references to 03 1512 and 03 1534
26 0548 R2 Vibration and Seismic Controls for Electrical Systems	Admin changes to eliminate reference to 03 1550 and update references to 03 1512 and 03 1534
31 2323.33 R5 Flowable Fill	Periodic review. Revision to 3.5.A to align with requirements in other concrete specs and asphalt specs.
32 9300 R4 Plants	Periodic review, revisions to 1.3 better submittal info/alignment.
33 0513 R6 Manholes and Structures	Periodic review. Revision to 1.3 and 1.4 misc. items.
33 1000 R5 Water Utilities	Periodic review. Revisions to 1.4 align with Chapter 13, 2.2.D manufacturer's revisions, misc. items.
33 3000 R6 Sanitary Sewerage Utilities	Periodic review. Revisions to 1.4 to align with Ch. 13, 2.2.E manufacturer's revisions, misc. items.
33 4000 R3 Storm Drainage Utilities	Periodic review. Revisions to 1.4 to align with Ch. 13, 2.2. Manufacturer's revisions, misc. items.
33 5100 R7 Natural Gas Distribution	Periodic review. Revisions to 1.2 and 1.3 clarify equipment, 1.4 clarify submittals, 1.5 to align with Ch. 13, 2.2, 2.9, 2.10, 2.11 manufacturers
33 7311 R3 Pad-Mounted Transformer Rough-In	Periodic review. Administrative updates.
33 7711 R3 Pad-Mounted Switch Rough-In	Periodic review. Administrative updates.

NEIL ARMSTRONG

ARCHITEXTS



DOE TECHNICAL STANDARDS ACTIONS

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

DOE-HDBK-1208-2012, Accident Investigation and Prevention

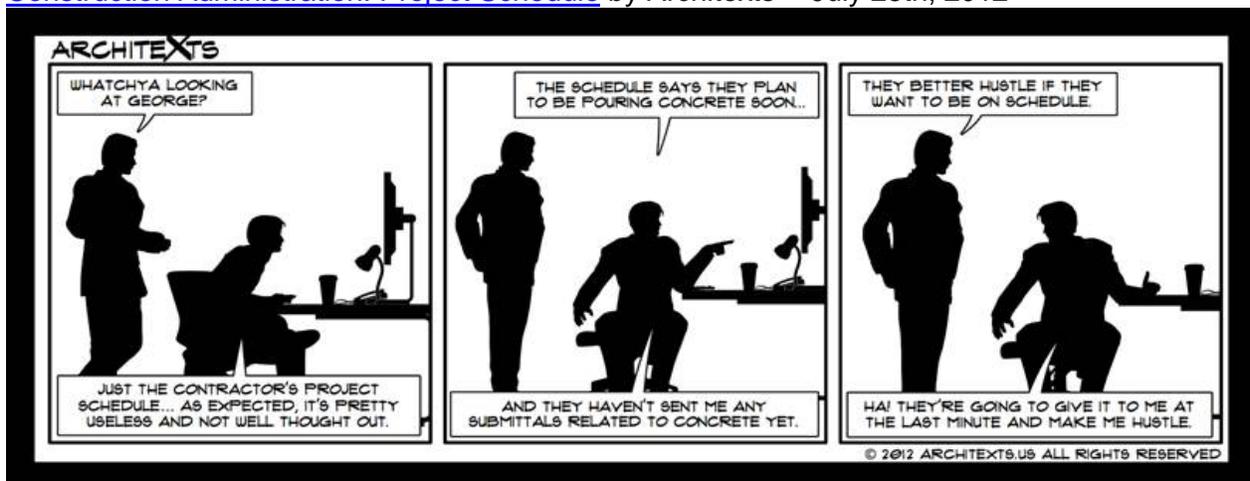
Volume 1 - Accident Analysis Techniques (252 pages) [PDF](#) (3 MB)

Volume 2 - Operational Safety Review Techniques (99 pages) [PDF](#) (2 MB)

WHEN GOOD CONDUCT OF ENGINEERING EXECUTION ISN'T FOLLOWED

This cartoon is dedicated to the hard-working project and plan review engineers that, more often than they should, must take heroic action when submittals arrive later than the schedule in Exhibit I. It uses concrete as the work result in question, which is apropos given the aggregate problem discovered during a submittal review (first article).

[Construction Administration: Project Schedule](#) by Architexts -- July 25th, 2012



LAST MONTH'S UPDATE TOPICS

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

- **New Process Piping Spec!!!**
- **Other Spec Changes**
- **AP Changes**
- **CoE Training**
- **LANL Standards Issued in July**
- **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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