

## 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:

- **Standards in Retrospec(t)**
- **FY13 Standards Goals**
- **Suspect/Counterfeit Courses This Week**
- **Systems Engineering Webinar – Free PDUs!**
- **October is Fire Prevention Month**
- **Engineering Processes Changes**
- **LANL Standards Issued in September**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

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

**We are what we repeatedly do. Excellence, then, is not an act, but a habit.**

-- Aristotle (ancient Greek philosopher, scientist and physician, 384 BC-322 BC).

I'm taking this as an endorsement of the CoE programs -- Engineering Standards, Processes (e.g., APs), and T&Q -- which institutionalize the right behaviors.

### STANDARDS IN RETROSPEC(T)

Actually, while some might complain that some Engineering Standards requirements are retro, they all date from this century. Seriously, despite high construction project activity this past year, the program made some notable advancements, sometimes revising our master specs multiple times to capture new corporate knowledge in a timely way. We'd be lost without them.

Here's a brief summary of all the Standards work completed by Standards staff in FY12 (in case you didn't read every monthly Update to the end and mentally tabulate):

- Revised parts of Eng Standards Manual Chapters 1, 5, 7, and 16
- Revised over 60 specifications and several standard details
- Issued new trailer anchorage and metal stair details; new anchorage requirements for shelves/flipper units; and two new specifications, including an important new spec on process piping.

## FY13 STANDARDS GOALS

While I won't commit to half of this in Perform, Standards staff is eager to do the following in the upcoming FY (IS funding gods willing):

- Revise parts or all of ESM Chapters 1, 3-5, 7-9, and 15-17
- Revise a dozen or more specifications
- Issue a new precast concrete spec
- Issue standard details for anchorage of wall-mounted equipment and pad-mounted electrical gear (MCCs, xfmrs)

## China's rapid building leads to structure collapses

China uses up to 40% of the world's steel and cement each year while it builds its infrastructure with mind-boggling speed. But the new buildings "can only stand 25 to 30 years on average," said Qiu Baoxing, the country's deputy minister of construction, whereas in the U.S. they last 70 to 75 years. Poor building materials and the country's aim for growth over quality have affected the buildings' conditions and have led to a series of infrastructure collapses, writes Christina Larson. [Bloomberg Businessweek](#) (9/27)

## SUSPECT/COUNTERFEIT COURSES THIS WEEK

The LANL Suspect/Counterfeit Items (S/CI) Program, managed by QPA-Division-Institutional Quality, will be offering six individual, half-day sessions (morning and afternoon) of the S/CI Overview this Tues-Thurs (Oct 2-4) in White Rock. The sessions will be presented by Nancy Tessmar, the LANL S/CI Coordinator.

This class presents the potential impact of suspect/counterfeit items on the safety and reliability of LANL components and systems and describes the methods for preventing the introduction and use of S/CI in the workplace. In addition, it also explains how to obtain final disposition (including disposal) of S/CI discovered at the Laboratory. Examples of discoveries of S/CI at LANL and other sites are also presented.

To register: Log into UTRAIN using your crypto card, choose catalog, advanced catalog search. For Keywords ID type 39907 then select search. Click on the arrow (not the words suspect/counterfeit overview) to view the schedule of classes. Register for the session of your choice.

This class is REQUIRED for some LANL workers (per recently revised P330-9 on S/CI):

- any personnel performing a receipt inspection function, site-wide,
- construction and maintenance craft persons,
- LANL inspection personnel,
- procurement quality personnel, and,
- organizational SCICs (if designated by an organization) or POCs

It's recommended for all LANL workers, particularly engineers, crafts, machinists, electricians, welders, purchasing/procurement, inspection and test, and quality assurance personnel; and is highly suggested for managers, vendors/suppliers and DOE site personnel. It is also

recommended that personnel take this class as a refresher if it has been more than two years since last taking this class, as there is additional information available and overall improvement in the communication and implementation of S/CI requirements.

### **[A Brief Look into the Future of Mechanical Engineering](#)**

From ThomasNet.com: "While mechanical engineers are upbeat about the future for their profession, they are less certain that their skills will be adequate to meet global challenges in the coming 20 years, a new study on the future of the engineering profession concludes..." »  
[continue reading](#)

### **SYSTEMS ENGINEERING WEBINAR – FREE PDUs!**

Engineers that create or manage functions and requirements for complex projects are practicing systems engineering.

If you're Interested in learning the fundamentals of systems engineering (SE), the International Council of Systems Engineering (INCOSE) et al is hosting a tutorial webinar to help you learn the fundamentals of SE. The tutorial covers the SE fundamentals from the SE Standards perspective which includes IEEE 1220, EIA-632, and ISO/IEC/IEEE 15288. The tutorial also provides a composite view of SE and personal help in SE. A certificate of completion is provided on request, and people who complete the entire series can claim 11 PDUs.

The tutorial begins Wednesday, October 3rd and runs through December. It consists of 11 weekly 60-minute sessions held from 10-11am MT. Because LANL is a member of the INCOSE Corporate Advisory Board (CAB), there is no cost to LANL workers. There is no need to pre-register; just join in by going to this [website](#). Login with user ID: LANL (all caps) and password: directorate (all lower case).

The LiveMeeting site opens 30 minutes before the start time and each session includes an additional 30 minutes after for Q&A. "Seats" are limited, so log in early to be sure that you'll be able to participate. The schedule is subject to change, so check the sites each morning before class to obtain the latest schedule.

Also -- corporate membership entitles us to:

- The INCOSE Systems Engineering Handbook, which describes key process activities performed by systems engineers.
- Monthly webinars, live and archived
- Many technical guides and reports on specific technical topics and application areas.
- Tutorials on Systems Engineering Fundamentals and the SE Handbook.

Questions? Contact Heidi Hahn, LANL's CAB rep at 5-4606 or [hahn@lanl.gov](mailto:hahn@lanl.gov).

Had you at free PDUs, didn't we?

## OCTOBER IS FIRE PREVENTION MONTH

So chanting “Burn him, burn him” is no longer trendy at Ft. Marcy. The Fire Group folks would probably tell you that every month is Fire Prevention Month at LANL. Well, it’s good to believe in what you do, and LANL was barely singed by the Las Conchas fire last summer...

## ENGINEERING PROCESSES CHANGES

Commercial Grade Dedication, AP-341-703 r3, will hit the AP [SharePoint](#) site soon as a provisional-use document. Training will be delivered by Bill Kerley so that selected CSEs, and eventually others, will be qualified to create CGD packages.

For questions about the contents of any of these documents, please contact Eng Processes Program Manager Gurinder Grewal at [ggrewal@lanl.gov](mailto: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. Live long and prosper.

## LANL STANDARDS ISSUED IN SEPTEMBER

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

03 1534 R4	Post-Installed Concrete Anchors-Normal Confidence	Change of "version" for /of Hilti's HIT-HY 150 MAX-SD (to ESR-3013)
07 8400 R3	Firestopping	General update. Added sustainability requirements. Updated submittal requirements.
22 0816 R4	Disinfection of Potable Water Piping	Added reference to National and State requirements. Clarified certified sampler and testing requirements.

## DOE TECHNICAL STANDARDS ACTIONS

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

[DOE-HDBK-1209-2012](#), Access Handbook - Conducting Health Studies at Department of Energy (35 pages)

## WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

In recognition of Fire Prevention Month:



## LAST MONTH'S UPDATE TOPICS

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

- **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**

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

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