

ENGINEERING STANDARDS UPDATE

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

Topics this month:

- **CoE Hero**
- **CoE Office Director**
- **Systems Engineering PDUs**
- **Nuclear Workers Behaving Badly**
- **LANL Standards Issued in February**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

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

COE HERO

A bit shout-out to Donald Yardman in ES-EPD; last week he threw a flag on a self-perform project task that was starting work with drawings marked "Preliminary" rather than fully signed and "Approved for Construction." I could have covered this under "When Good Conduct of Engineering Isn't Followed" below but have more than enough material there this month.

COE OFFICE DIRECTOR

Last month, Site Chief Engineer and ES Division Leader Larry Goen delegated to Mel Burnett the authority to act on his behalf for CENG matters – i.e., the Engineering Process, Standards, and Training & Qualification programs. This includes issuing documents (and variances), coordinating with other programs, and a host of other fun administrative duties like supervising Gurinder and I. That makes him a hero, too.

SYSTEMS ENGINEERING PDUs

Systems Engineering is the discipline of formally determining and managing project technical requirements. INCOSE is the International Council on Systems Engineering. So? This news from [Heidi Hahn](#) in the ADE office:

As of January, 2014, the local INCOSE Chapter (Enchantment Chapter) has begun posting recordings of their chapter meetings at <http://www.incose.org/enchantment/library.aspx> View a meeting to earn 1 PDU toward Certified Systems Engineering Professional (CSEP) renewal. Depending on the topic, these recordings may also be suitable for PDU credit towards other certification and licensure programs, such as Certified Software Development Professional (CSDP) and Professional Engineer (PE). Check out the website for a listing of the presentations available for viewing.

NUCLEAR WORKERS BEHAVING BADLY

Note, being NRC, this first one is not directly applicable to us but interesting -- and cautionary to anyone at LANL thinking about trying it.

NRC expanding enforcement rule to cover 'deliberate ignorance'

By The Energy Daily, February 11, 2014, George Lobsenz

Citing a hole in its enforcement regime, the Nuclear Regulatory Commission today is proposing a rule to make clear that nuclear plant workers who deliberately remain ignorant of reactor safety requirements to avoid regulatory violations can still be subject...(full story is subscription).

This second one is just deplorable.

Half of Exported Japanese Nuclear Parts Questionable (source: enformable.com)

The Mainichi Shimbun report that nearly half of Japanese nuclear power plant equipment exported over the last ten years failed to undergo safety inspections through the national government. Instead of requiring all equipment to be subject to the government safety inspections, the Japanese government only conducted the safety inspection if the manufacturer received a loan from the government-affiliated Japan Bank for International Cooperation (JBIC) or applied for insurance from Nippon Export and Investment Service.

In the last decade, Japan exported roughly 124.8 billion yen worth of nuclear equipment to 23 countries and territories, only 73.7 billion yen worth of equipment sold to China, the United States, France, Belgium, and Finland received government safety inspections. Approximately 51.1 billion yen worth of equipment failed to receive such inspections. The unchecked equipment included key safety-related components such as, reactor pressure vessels, reactor pressure vessel lids, and control rod driving systems. Three major manufacturers, Hitachi, Ltd., Toshiba Corporation, and Mitsubishi Heavy Industries, Ltd. are among those who exported nuclear equipment without safety inspections.

Despite the on-going Fukushima Daiichi nuclear disaster, Japanese Prime Minister Shinzo Abe has been promoting nuclear exports from Japan and loudly reassuring the international community that Japanese nuclear technology is the world's safest, yet another outspoken claim from the boisterous Abe that would later be put under intense scrutiny.

"It came as a surprise to me that many exported nuclear plant-related devices failed to undergo safety inspections," said Keio University professor Masaru Kaneko. "Prime Minister Shinzo Abe claimed in a speech overseas that Japan can provide the world's safest atomic power technology, but how can Japan guarantee the safety of nuclear plant equipment Japanese firms export without a proper system to examine it?"

LANL STANDARDS ISSUED IN FEBRUARY

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

03 1534 R6 Post-Installed Concrete Anchors Normal Confidence	Replace Hilti HY-150 w/ HY-200 & fix 2.2.A typos (e.g. delete 'drop-in,' etc.)
13 3419 R3 Metal Building Systems	Replace AISC cert w/ IAS accredit., & clarify horiz. diaphragm choices.

Standard Details (Civil) [STD-342-400](#)

Mell Smithour led the effort in ES-UI to update a number of templates with CAD help by Kelsey Souza, Krystle Trujillo, and others.

- Parking Lots - all ST-G2020-X drawings (2)
- Pedestrian & Bicycle Facilities - all ST-G2030-X drawings (1)
- Site Development - all ST-G2040-X drawings (11)
- Utilities- all ST-G30GEN-X drawings (5)
- Potable/Fire Protection Water - all ST-G3010-X drawings (11)

DOE TECHNICAL STANDARDS ACTIONS

DOE [Tech Stds](#) activity this past month:

DOE-HDBK-1132-99, Design Considerations (reaffirmed with minor updates, see change summary in beginning)

This Handbook includes information and suggestions for the design of systems typical to nuclear facilities, information specific to various types of special facilities, and information useful to various design disciplines.

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

Hot. Cool. Yours.

Even though this monthly topic is supposed to only be about engineering failures, I'm posting some pictures of a range of purported Sochi problems. Insensitive and contrary to Olympic spirit? Perhaps. But if one can't have some fun with our former cold war enemy given where we work, I'm sorry. Also, if war breaks out in the Ukraine it's not my fault, talk to Mel.

It's possible some were mistakes in design or review. More likely the problem was down the line in construction or lack of inspection. But even if it's poor construction quality it still fits the topic since, if Russia's like us, engineering gets involved when being asked to accept problems as-is. (Or gets blamed for a poor design review this time...but too thorough a review every other time. Or standards issues but no budget...).

Thanks to Clay Davis for this first photo in which the "engineering" part of "pre-engineered metal building" is used loosely. Looks like the slab was too small, a bit thin, poured over rocks, and apparently sloping left-to-right severely. Rubble supports allowing continued construction are just plain scary.



There were so many other photos it was hard to pick, so I just went with a scatological theme and will use some of the others in the future





Many lack-of-divider problems, here are a couple:



Maybe just a mock-up/display?



Infamous stuck door



Seriously?



Unconventional signage





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 Tomorrow**
- **Engineers Week...Days**
- **Nuclear Workers Behaving Badly**
- **LANL Standards Issued in February**
- **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