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## ENGINEERING STANDARDS UPDATE

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

### Topics this month:

- **Mechanical Standards POC**
- **Get it Right the First Time with Project Determination Form**
- **Electrical Standards Course July 2**
- **Engineers Behaving Badly**
- **Engineers Behaving Well**
- **LANL Standards Issued in May**
- **Engineering Processes Changes**
- **DOE Technical Standards Actions**
- **Suspect/Counterfeit Items Course this Week**
- **When Good Conduct of Engineering Isn't Followed**

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

### MECHANICAL STANDARDS POC

Michael Ladach was selected as the new ES-EPD Mechanical Team Leader replacing the retired Charles DuPre; he will also be the Engineering Standards POC for all things mechanical (except for pressure safety; that's Ben Swartz with help from Matt Cover, who's back at EPD). Michael's alternate is Scott Salisbury.

### GET IT RIGHT THE FIRST TIME WITH PROJECT DETERMINATION FORM

We all know that poor design input causes problems in the design process, and that engineering in the DOE world is complicated. That's why we introduced the Preliminary Project Determinations Form through ESM Chapter 16 IBC Program Section IBC-GEN.

Its intent is to assist with project planning and scope definition (particularly code requirement scope) early on in the pre-design phase. The completed form represents our best thinking about IEBC work class, IBC use/occupancy class, risk level, PC category, etc. Once the form gains necessary reviews (Scott Richardson handles the bulk of this), we provide the preliminary input to the Design Agency to help them understand the project scope and its basis. But, as Scott has said, make no mistake here: the AE must update this preliminary thinking with regard to which code requirements apply to the project and provide a comprehensive code analysis. This is stated right on the form – which, by the way, was just revised and improved in May along with other key pieces of the IBC program (see Standards Issued article below).

## ELECTRICAL STANDARDS COURSE JULY 2

Wed July 2 8am-12pm, White Rock Training Center (TA00-B1308)

This 4-hr course covers the electrical engineering standards in Chapter 7 of the LANL Engineering Standards Manual and discusses mandatory requirements and good practices for those involved in electrical design. Strongly suggested for electrical designers, electrical engineers, electrical safety officers, and facility managers. **Taught by Electrical Standards POC Duane Nizio.**

In UTrain, search in upper right for LANL Standards, scroll down to course, add to To-Do List, and register. Or click Catalog/Advanced Catalog search, and enter 17998 as ID. AEs are encouraged to attend and can contact CT-ITS, 7-0059 or e-mail [esh-registration@lanl.gov](mailto:esh-registration@lanl.gov).

## ENGINEERS BEHAVING BADLY

Thanks to Anthony Cuaron for [this](#) interesting article about a \$68M technical baseline oversight by French railway engineers. Like at LANL, when one has old, pre-standardized facilities they cannot assume the configuration. Article also discusses other notorious engineering failures around the world.



Photo: <http://en.wikipedia.org/wiki/TGV>

## ENGINEERS BEHAVING WELL

...Attend the NMSPE Annual Meeting! The conference will be held on Friday, June 13 at the Rotunda at the Science & Technology Park at UNM. Don't miss all of the educational and interesting programs, including ethics. You can register at [www.nmspe.org/events/](http://www.nmspe.org/events/). Registration deadline is Tuesday, June 10, 2014. [Click here for the Registration Form.](#) [\$100 members, \$150 others]

## LANL STANDARDS ISSUED IN MAY

### Eng Standards Manual [STD-342-100](#)

Chapter/Section	Summary of Changes
<b>Ch. 16</b> , IBC-GEN IBC General Requirements R8	Revised criteria for project determination, put in form; added reviewer qual guidance; combined checklist and CoO; addressed tents; other minor changes. Revised Form 1: Preliminary Project Determinations, Form 2: HazMat Determination, Form 5: Building/System Final Inspection Checklist, and Att. A: LANL Building Code (LBC).
<b>Ch. 16</b> IBC-IP, IBC Inspection Process R8	Clarified SI roles and funding, inspector role. Also revised Att. B: Statement of Special Inspections.

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

01 4000 R6 Quality Requirements	Clarified SI requirements and expense at 1.7.
26 0533 R5 Raceways and Boxes for Electrical Systems	Clarified outlet box and conduit type and installation (2.19.B.2, 3.4.D, 3.7.A.6-7). <b>Thanks to Wayne Tafoya, Alex Baghaei Aghdam Oskue, POC Duane Nizio.</b>
28 3100 R8 Fire Detection and Alarm	Clarified test plan expectations (1.4.D.2) and the type of conductor to be used in exterior/wet versus interior/dry locations (2.15.B). <b>Thanks to Gary Exner, Jim T, Duane Nizio, SME Walter Martinez, POC Julie Wood, AHJ Jim Streit.</b>

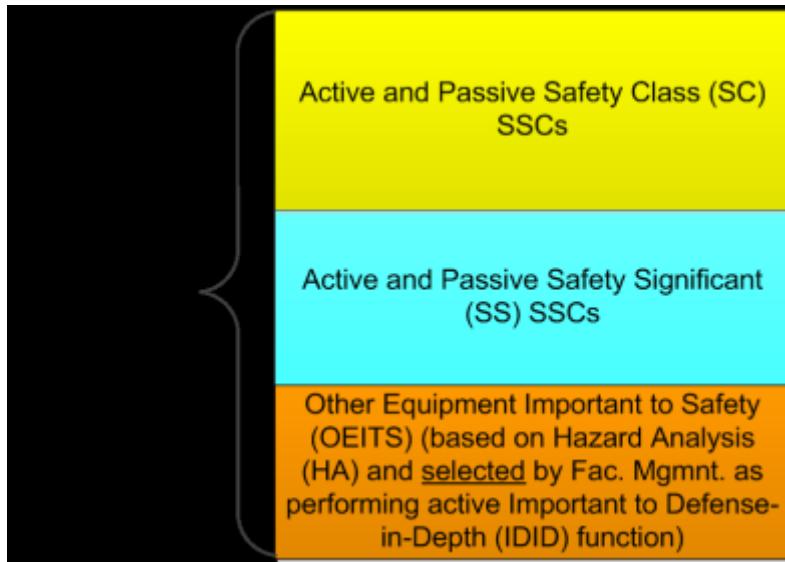
## ENGINEERING PROCESSES CHANGES

The following Administrative Procedures were posted on the Conduct of Engineering Office, [Engineering Processes](#) page in SharePoint. Please refer to the notification on these for instructions on training and implementation. For questions about APs, please contact [Gurinder Grewal](#) at 667-3667.

Also, as forewarned last month, Gurinder's last day is July 11. Mel Burnett is still looking for the right person to take over. Call him!

<b>AP-341-502-R4</b>	<b>Management Level Determination and Identification of Quality Assurance and Maintenance Requirements</b> (Course#55428 for those who must read AP revisions and sign)	Issued: 5/16/14
<b>AP-341-101-R2</b>	<b>Designating Vital Safety Systems and Cognizant System Engineers</b> Course#44251	Issued: 5/27/14

By the way, if you've heard the terms VSS, OEITS, and IDID but don't understand them, AP-341-101 Figure 1 shows the scope of VSSs in hazard category 2 and 3 nuclear facilities:



## DOE TECHNICAL STANDARDS ACTIONS

DOE [Tech Stds](#) activity this past month: None

## SUSPECT/COUNTERFEIT ITEMS COURSE THIS WEEK

This is becoming a requirement for all flavors of facility system engineers, so don't wait.  
Paraphrasing an Eric Holmes em:

On June 3<sup>rd</sup>, 4<sup>th</sup>, & 5<sup>th</sup>, the LANL Suspect/Counterfeit Items (S/CI) Program of the Quality & Performance Assurance Division is offering six sessions (morning and afternoon) of the S/CI Overview Training Class (8-11:30 or 1-4:30).

Title: Suspect/Counterfeit Items Overview, Course Number: 39907

Location: Canyon School Complex, 1100 Fourth St. Los Alamos, NM, 87544 (TA00 - Bldg. 0199)

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.

This class is *required* for LANL construction and maintenance employees, inspection and test employees, procurement quality employees, receipt inspection employees (site-wide), organizational SCICs, and organizational points of contact (see P330-9). The class is recommended for all LANL employees, particularly crafts, machinists, electricians, welders, engineers, purchasing/procurement, and other quality assurance personnel. The class is highly suggested for managers, vendors, suppliers and DOE site personnel.

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

LANL employees and contractors follow a similar path as the electrical standards course above to register for this course. If you are an uncleared individual attending this class, please email [ndt@lanl.gov](mailto:ndt@lanl.gov) or [eholmes@lanl.gov](mailto:eholmes@lanl.gov) to make escort arrangements. If you are a vendor or non-LANL employee, please email [ndt@lanl.gov](mailto:ndt@lanl.gov) or [eholmes@lanl.gov](mailto:eholmes@lanl.gov) to ensure you receive credit for this class and are added to the attendance roster.

The sessions will be presented by Nancy Tessmar, the LANL Suspect/Counterfeit Items Coordinator. If there are any other questions regarding the program, please contact Nancy at [ndt@lanl.gov](mailto:ndt@lanl.gov), 665-3351, 695-5282.

Note: If you have any questions you would like to ask pertaining to the material discussed in this course, please feel free to email those questions to Nancy or myself prior to the start of the class so we may assure all questions are answered.

## **WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED**

Pretty, but a waste of \$287M.



Photo: Vrysxy via Wikimedia Common

### Never-occupied Harmon hotel and casino to be razed due to structural issues

Actually, it seems almost everyone failed but the final check in the QA chain -- including construction subs, special inspectors, and engineer-of-record structural observers. Construction of the Las Vegas tower was halted in 2008 after county inspectors discovered “pervasive” problems with rebar installation. Now MGM has received permission to demolish the building. They've sunk about \$275M and it'll cost another \$12M or more to demolish – that's a LOT of nickel slot play. And an example of why LANL does special inspection of critical code work real-time with unbiased, in-house staff per ESM Chapter 16.

### LAST MONTH'S UPDATE TOPICS

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

- **May is Building Safety Month**
- **MasterFormat® 2014 Update**
- **Engineers Behaving Badly**
- **Engineering Processes – Big Changes Ahead**
- **Manufacturers Behaving Badly**
- **LANL Standards Issued in April**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

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