

This is the monthly newsletter of the LANL Engineering Standards Program. The Standards are mandatory documents that define the minimum design criteria, fabrication, and installation practices for the alteration, repair, and construction of LANL facilities and the programmatic and process equipment within them. [[P340-1](#)]

Topics this month:

- **Spook-tacular Security**
- **Electrical Standards Training December 2**
- **Spark-tacular NDE**
- **Repair vs. Alteration**
- **Calculations AP Revised**
- **LANL Standards Issued in October**
- **DOE Technical Standards Actions**

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

SPOOK-TACULAR SECURITY

Spook, spy, security – get it? Halloween is just behind us. But not the need to properly cool and monitor servers and server room temperatures as required in recently expanded Chapter 7 Electrical Section D5030, Communications. Now, October saw a minor revision to ESM Chapter 9, Security, to highlight the requirements for new VTRs. If you were in TA-16-933 on June 4 you'll know why. Hint: October was Fire Safety Month.

ELECTRICAL STANDARDS TRAINING DECEMBER 2

Point-of-Contact David Powell will teach "[LANL Electrical Engineering Standards](#)" on Wed, Dec 2 from 8 am - 4pm at the White Rock Training Center. The 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. Reserve online using link above or call 667-0059 or e-mail Central Training at esh-registration@lanl.gov

SPARK-TACULAR NDE

In an effort to leave no pun unturned about standards, last month's topic "Spec-tacular Welding" covered the Div 1 welding master specs that we now have in addition to the git-'er-done welding procedure specs. And that the LANL-wide Welding Program in ESM Chapter 13 has been around since 2004.

Well, in October, Chapter 13 was expanded to cover non-destructive examination and renamed “Welding, Joining, & NDE.” [Volume 6](#) covers both welding inspection and general NDE (WIGN) and has two sections: WIGN 6-01, Welding Inspector Qualification, and WIGN 6-02, NDE Inspector Qualification. Also included are eight procedures addressing the common NDE techniques used.

WIGN 6-01 doesn’t change anything for CWIs, but 6-02 is all new and sure helps implement LANL’s special processes QA element. It doesn’t include NDE done by AET-6, so has no guidance on how to x-ray a weapon or component (nuke a nuke).

This is the best expansion of the Standards Program since the issuance of the Pressure Safety Chapter in March. Again, contact Kelly Bingham for help.

REPAIR VS. ALTERATION

Not as exciting as Pacquiao vs. Cotto on HBO, but “How Standards Apply to Maintenance” in the December 2008 Update addressed the topic broadly and discussed how the International Existing Building Code (IEBC) defines both Repairs and Alterations, and treats each very differently.

A key point was that activities that one might consider a repair may in fact be an Alteration under the IEBC and must follow the rules for same in IEBC Chapters 6-8. Digging into the IEBC provides some useful definitions regarding the distinctions.

Section 202 REPAIR. “The restoration to good or sound condition of any part of an existing building for the purpose of its maintenance.”

Makes sense, but IEBC Chapter 1 makes it clear that some activities done as maintenance are in fact Alterations:

105.2.2 Repairs. Application or notice to the code official is not required for ordinary repairs to structures and items listed in Section 105.2. Such repairs shall not include the cutting away of any wall, partition, or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required means of egress or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include addition to, alteration of, replacement, or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent, or similar piping, electric wiring, or mechanical or other work affecting public health or general safety.

So, once in Alteration territory, IEBC Chapter 4 defines the levels of Alterations:

ALTERATION—LEVEL 1...includes the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

ALTERATION—LEVEL 2...includes the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

ALTERATION—LEVEL 3...applies where the work area exceeds 50 percent of the aggregate area of the building.

Bottom line, facility maintenance and engineering folks need to understand and follow the IEBC requirements. IEBC-2006 is available online from the Library's [IHS](#) subscription (uncheck "Most Recent Revision" and search for IEBC).

CALCULATIONS AP REVISED

Not Standards, but readers may be interested. The following CoE Administrative Procedure has been revised.

[AP-341-605 Calculations](#), R2 (10/09/09)

For a listing of all APs, see the internal CoE [Engineering Processes](#) page. For questions about this or any APs, please contact Gurinder Grewal at ggrewal@lanl.gov or 667-3667.

LANL STANDARDS ISSUED IN OCTOBER

Engineering Standards Manual

Chapter 9: Security Rev. 2	Added pointers to Electrical D5030 for server room cooling and monitoring at 5.2.H.7, 5.6.D.1, and 5.6.E.1; other admin changes
Chapter 13: Volume 6 Rev. 0	Replaces Vol. 1, GWS 1-11. This revision creates a new Vol. 6 - Welding Inspection & General NDE.
Chapter 13: Vol. 1 Section 1-02 Rev.7	Invoked new Master Specs 01 4444 and 01 4455, referenced Volume 6 vice GWS 1-11, and other admin changes.
Chapter 13: Vol. 1 Section 1-09 Rev. 4	Invoked new Master Specs 01 4444 and 01 4455, referenced Volume 6 vice GWS 1-11, and other admin changes.
Chapter 13: Vol. 1 Section 1-11 Rev. 3	Canceled , replaced by Volume 6 WIGN 6-01

LANL Master Specifications (update campaign in progress)

03 3001 Rev. 3 Reinforced Concrete	Clarified CMTR/CoC and welding requirements at 1.4 and 2.3; referenced standards at 1.5.A; clarified cover reqts for footings/slabs at 3.4.C; slump and air notes at 3.11.A; ACI reference changes.
22 0535 Rev. 0 Electric Heat Tracing	Initial issue.
26 0536 Rev. 2 Cable Trays for Electrical Systems	<ul style="list-style-type: none">• Corrected IBC seismic criteria in Service Conditions article.• In Submittals article added requirement for seismic qualifications of cable tray systems designated with Ip greater than 1.0.• In Submittals article added guidance about when detailed shop drawings of cable tray systems may be warranted.• Revised Cable Tray Firestop articles to address products and installation requirements unique to cable tray systems.• In Installation article, replaced Section 26 0520 with Section 26 0548 – Vibration and Seismic Controls for Electrical Systems
32 8400 Rev. 3 Planting Irrigation	Minor editorial changes and test and inspection updates.
40 0527 Rev. 2 Piping and Tubing Inspection Checklist	Clarify specification scope, add Quality Assurance requirements and minor editorial changes.

DOE TECHNICAL STANDARDS ACTIONS

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

LAST MONTH'S UPDATE TOPICS

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

- **New CENG Office Director**
- **IBC, IEBC, LEBC**
- **Last Call -- Are You on a National Standard Committee?**
- **Spec-tacular Welding**
- **LANL Standards Issued in September**
- **DOE Technical Standards Actions**

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

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 <http://engstandards.lanl.gov/>

Please consider the environment before printing this email