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. [IMP 341]

Topics this month:

- **KSL In-sourcing**
- **Standards Web Makeover**
- **How Standards Apply to Maintenance**
- **Happy Turkey Standards Day**
- **LANL Standards Issued in November**
- **DOE Technical Standards Actions**

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

KSL IN-SOURCING

On December 1, LANL's Support Services Subcontractor KSL will be in-sourced – their functions and most personnel absorbed into the LANS organization. So far as the effect on the Engineering Standards, the majority of specifications and a number of ESM chapters have already been updated to reflect this change. The remaining chapters and documents will be clarified upon next revision; in the meantime, where they state SSS, please interpret this as the LANS organization now performing that function. When in doubt, please contact the chapter POC for the wording in question. And welcome aboard, all ya'll!

STANDARDS WEB MAKEOVER

The upgrade of the Engineering Standards website discussed last month is now planned for December. Users will benefit from our adoption of the new LANL webpage template, thus providing content location and navigation consistent with many other institutional webpages. The products themselves did not change; however, if faulty pages or documents are found please lets us know at stdsweb@lanl.gov …and be patient as we work out any bugs!

HOW STANDARDS APPLY TO MAINTENANCE

Recently, a question arose regarding how the LANL Standards apply to repairs and replacements, given the IMP 341 applicability statement at the top of this email. The answer is a bit complicated but well worth understanding; the Standards deal with repairs and replacements in three main areas: the O&M Manual, the IBC Program, and the IEBC.

The O&M Manual is available from the Standards homepage but is not actually maintained by the Engineering Standards Program (maybe by ES-SE soon). The O&M Manual contains requirements in topical "Criterion" for maintenance primarily and operations less so, and a little on actual repair or replacement.

LANL's International Building Code (IBC) Program is contained in Chapter 16 of the Engineering Standards Manual. This is LANL's implementation of a building or permitting department. Certain repairs and replacements trip the criteria of this program listed in Section IBC-GEN, and this triggers the permitting, review, inspection, and approval mechanisms of the program. IBC-GEN also invokes the International Existing Building Code (IEBC).

The IEBC (available from the Library's IHS online national standards service) defines several classes of work including Repairs and Level 1, 2, and 3 Alterations. Simplifying, Repair, as one might expect, involves restoration to original condition or replacement with the same form, fit, and function. Level 1 Alterations generally involve replacements performing the same function, but the result is clearly different from just a repaired-to-original state; Level 2 Alterations address adding equipment, reconfiguring a system or space, etc.; and Level 3 Alterations involve over 50% of a building's area. Depending on the classification above, the IEBC drives materials and methods allowed – and also drives meaningful safety improvements to surrounding structural, electrical, and supporting systems depending on the extent of alteration.

All this means there is useful direction regarding what facility and process organizations must do when making repairs and replacements. This does not mean, obviously, that every replacement of a small component or subcomponent like an electrical bulb or relay must be with what would be the relay of choice in a new installation rather than what fits; in this case, such a direct replacement in a facility system would fit the IEBC definition of Repair and proceed -- but something like carpet replacement would require compliance with the standard carpet spec.

Were the component in a programmatic or process (non-facility) system, decisions would follow ESM Chapter 1 Section Z10's Code of Record Subsection (i.e., with agreement between the Design Authority Representative and the Standards POC/authority). In nuclear and high or moderate hazard facilities it might also involve the Engineered Equivalent Determination process of Conduct of Engineering AP-341-503.

HAPPY TURKEY STANDARDS DAY

A quick search on "turkey" in the Library's IHS online standards subscription yielded dozens of hits; a few follow (the MILs making us thankful we're not frontline soldiers). Bon appétit tomorrow!

ASTM F 1356 Standard Practice for Irradiation of Fresh and Frozen Red Meat and Poultry to Control Pathogens and Other Microorganisms

CGSB 32.183M Turkeys: Eviscerated - Supersedes 32-GP-183B

GOST 21784 Poultry meat (carcasse of hens, ducks, geese, turkeys, guinea-fowls). Technical requirements.

MIL-PRF-44487 TURKEY BREAST FILLET, CHUNKED AND FORMED, GRILLED, IN GRAVY, WITH POTATOES, PACKAGED IN A FLEXIBLE POUCH, SHELF STABLE

MIL-T-44064A TURKEY DICED WITH GRAVY, THERMOSTABILIZED, FOR MEAL, READY-TO-EAT

LANL STANDARDS ISSUED IN NOVEMBER

ENGINEERING STANDARDS MANUAL

Chapter 5 Structural Section I General, Rev. 5
Minor administrative changes corresponding to 2006 IBC changes in Section II.

Chapter 7 Electrical Section D5010 , Rev. 3
Updated to 2008 NEC. Added requirements to calculate ampacity of underground medium-voltage and low voltage circuits in accordance with NEC Annex B. Added reference to LANL Standard Drawings ST-D5010-3, -4, and -5 for metering wiring and installation details. Eliminated separate requirements for power panelboards and lighting panelboards; deleted section that had addressed lighting and appliance branch circuit panelboards. Added requirement that dry-type transformer secondary be protected by a single overcurrent protective device. Changed conduit bend and length limits from requirement to guidance. Added aluminum as acceptable conductor in sizes 1/0 and above on ML-3 and ML-4 projects when terminated using approved compression terminals. Added design requirements for enclosed bus assemblies.

Chapter 7 Electrical Section D5020, Rev. 4
Updated codes and standards. Added criteria for raceways and cords under raised floors. Prohibited multi-wire branch circuiting. Added lab receptacle circuiting criteria. Reduced unit load for office PC outlets that share networked printers. No receptacles within 3 feet of gas meters or regulators. Added criteria for electric drinking fountain circuits. Clarified selection of heavy-duty receptacles. Added welder outlet requirements. Skid-mounted equipment to be accordance with NFPA 79. Control panels must be NRTL listed. Added criteria for safety switches where short-circuit current exceeds 10 kA. Added requirements for use of Drawing ST-D5020-1. Permitted use of T-5 fluorescent lamps for certain applications. Required use of compact fluorescent lamps when re-lamping incandescent luminaires. Added criteria for glovebox illumination. Added requirement for manual lighting control at each personnel entrance to a room. Added more definitive criteria for emergency lighting calculations. Photoluminescent exit signs to be used in place of self-luminous (tritium) exit signs.

Chapter 11 Radiation Protection, Rev. 1 Change 1
Revised 3.2.L & 3.2.Q. on fluence-to-dose conversion factors (DCFs) and conditions requiring a formal radiological engineering analysis and design
review.

MASTER SPECIFICATIONS MANUAL http://engstandards.lanl.gov/index.html#spec
LMSM Section 100-200 Specification Requirements Rev. 3
Subcontract(or) vice Contract(or) and other terminology changes; required rev numbers on spec table of contents.

28 0528 Rev. 2 Pathways for Electronic Security
Major change revised all sections to reflect new infrastructure requirements for the new Argus Security System.

DOE TECHNICAL STANDARDS ACTIONS

http://www.hss.energy.gov/NuclearSafety/techstds/standard/recappts.html
New or Revised DOE Tech Stds this past month: None

LAST MONTH'S UPDATE TOPICS

Miss an issue? The archive is at "Monthly Update" below the Google search on the Standards homepage. Last month's Update topics were:

- **Extreme Makeover -- Standards Web Edition**
- **Also in November**
- **LANL Standards Issued in October**
- **DOE Technical Standards Actions**

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

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