
ENGINEERING STANDARDS UPDATE

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

This is the monthly newsletter of the LANL Conduct of Engineering Office's Engineering Standards Program. 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:

- **New Process Piping Spec!!!**
- **Other Spec Changes**
- **AP Changes**
- **CoE Training**
- **LANL Standards Issued in July**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

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

NEW PROCESS PIPING SPEC!!!

Ever since [10CFR851](#) authorized fines of up to \$70,000 per safety violation per day, LANL's taken pressure safety super-seriously. If you own any of the 7000+ systems that were walked down and written-up for code non-compliance in recent years, you'd probably agree. And while some naysayers might argue that we haven't killed anyone in a pressure incident lately, Morton-Thiokol management may have said the same thing before [Challenger](#). Back to LANL: ESM [Chapter 17](#) describes our pressure safety program which covers vessel design and relief protection, fabrication, installation, and maintenance; it also includes requirements for piping. Piping, when it's plumbing for a building, follows the Uniform Plumbing Code. If it's outside that scope, then it must follow the appropriate ASME B31-series code. Most process and programmatic piping follows ASME B31.3, Process Piping.

Like most codes, ASME B31.3 is complicated and long (nearly 400 pages), so properly installing piping or tubing to it is not a simple prospect. As with similar matters, there's no need to fear, ESM is here! Yes, the under-appreciated (underdog) ESM Chapter 17 includes a separate, 168-page guide to help with B31.3 implementation. Much of that content is the P-specs in Appendix A that are generic, basic "recipes" for a wide variety of systems once the pressures, temperatures, joining preferences, and material compatibilities are understood. There are also several more complete, system-specific fluid service recipe sheets in Appendix B. Both recipe types are backed by calculations that ensure B31.3-compliant pressure boundary strength.

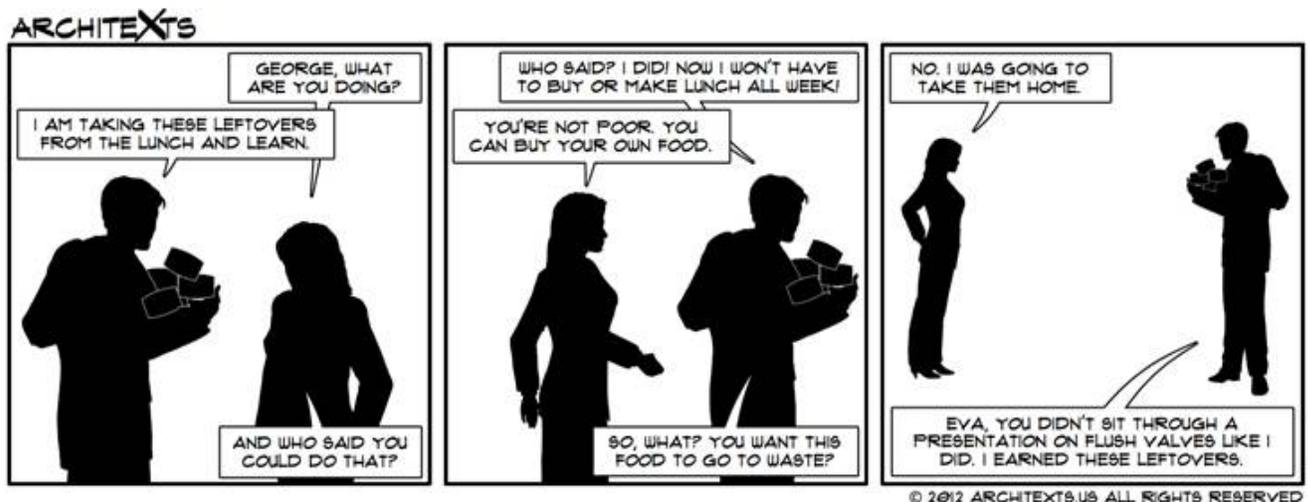
What LANL's lacked, but now has, is a Master Spec section that's a front end to the P-specs and fluid service sheets in the Guide. [Section 40 0513, Process Piping](#), developed by John Sur in

ES-DE with help from others, condenses the key requirements of those 400 code pages into a dozen or pages to enable work to get done. It drives quality work and execution in Parts 1 and 3, and allows the designer to attach the Guide's P-specs or fluid service sheets to provide the remaining product and fabrication requirements. Section 40 0513 also points to several related spec sections that must be bundled with it to create a complete specification (e.g., Div 1 sections on welding and pressure testing).

Using a short spec section to specify process piping is a challenge, and our understanding of what to say in a clear, concise, and correct way (CSI's three C's) will no doubt improve over time as we get more experience with it. Please send feedback to Mechanical POC [Charles DuPre](#) and [John Sur](#).

OTHER SPEC CHANGES

Some would say greening our specs is good for Mother Earth; others apparently disagree. Going with the majority, Architectural POC David Carr has been busy updating/greening several master specs and finishing a new section, 07 1326 -- Self-Adhering Sheet Waterproofing, this past month. Also, Charles, in addition to the new section on process piping, signed off on a couple of master revisions. These included 22 4200, Plumbing Fixtures, which will further reduce water consumption at LANL. In honor of that:



"Lunch & Learn: Leftovers" by [Architexts](#) on February 21st, 2012

COE TRAINING

Here's the remaining schedule, revised 7/24. Taught in MSL Auditorium (TA-3-1698, directly across from CMR).

DATE	ITEM#	COURSE TITLE	INSTRUCTOR	TIME
SCHEDULED Aug 1	43665	Support To Operations And Maintenance	Gurinder Grewal	8-5 PM
SCHEDULED Aug 8	43667	Maintenance Processes	Kyle Carr	8-12
SCHEDULED Aug 8	40979	Work Control Processes	Kyle Carr	1-5 PM
RESCHEDULED Aug 15	43663	Technical Baseline	Gurinder Grewal	8-5
RESCHEDULED Sept 12	43668	Project Engineering Processes	Mike Clemmons	1-5

If UTrain enrollment doesn't work, contact Yolanda J. Trujillo, ytrujillo@lanl.gov, 665-5696 if you wish to enroll, cancel, etc. She'll send email confirmations and reminders.

AP CHANGES

The following Administrative Procedures changes occurred last month. For a listing of all APs, visit the Conduct of Engineering Office, [Engineering Processes](#) page. For questions about the contents of the APs, please contact Program Manager Gurinder Grewal at ggrewal@lanl.gov or 667-3667. Always ensure you are working to the latest revision being implemented by your facility.

- [AP-341-510-R1](#) Walk-down and Data Gathering
- [AP-341-511-R1](#) Design Information Reconstitution

LANL STANDARDS ISSUED IN JULY

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

07 1113 R2 Bituminous Dampproofing	General update; added sustainability requirements
07 1326 R0 Self-Adhering Sheet Waterproofing	NEW!
07 7100 R2 Roof Specialties	General re-write and reformatting. Revised and updated sustainable design requirements.
09 5100 R2 Acoustical Ceilings	General re-write and reformatting. Revised and updated seismic and sustainable design requirements.
10 2800 R2 Toilet & Bath Accessories	General re-write and reformatting. Revised and updated sustainable design requirements.
22 0813 R5 Testing Piping Systems	Added requirements for Other Process Piping per B31.3 (3.2.M) to support 40 0513.
22 4200 R5 Plumbing Fixtures	Reduced volume of water closet flushometers and showers; added ADA requirements
40 0513 R0 Process Piping	NEW!

DOE TECHNICAL STANDARDS ACTIONS

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

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

See anything wrong in this picture?



Photo courtesy of constructionphotographs.com

More construction quality than CoE, but what about having a 70,000 pound truck on the reinforcement (and what's left of the vapor barrier, if present)?

LAST MONTH'S UPDATE TOPICS

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

- **Flip Out When You Rock On**
- **RLUOB Achieves LEED Gold**
- **CoE Training Includes Standards Course this Month**
- **IHS Online National Standards Interface Changed**
- **Engineering & Surveying Act Changes**
- **LANL Standards Issued in June**
- **DOE Technical Standards Actions**
- **When Good Conduct of Engineering Isn't Followed**

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

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