

Engineering Standards Update

News from Engineering Standards Program

Aug 6, 2024

[Standards are serious business](#) but this newsletter isn't always.

Topics this month:

- [CUI Resources Now Available](#)
- [AI Research Guides at Research Library](#)
- [ServiceNow Request Forms Available for EDRMS/ERMS and Aproveo Applications](#)
- [Training & Qualification](#)
- [LANL Engineering Standards Issued in July or so](#)
- [LANL Engineering Processes Changes](#)
- [National Standards Action](#)
- [DOE Technical Standards Action](#)
- [MSS Document Action](#)
- [When Good Conduct of Engineering Isn't Followed](#)



CUI RESOURCES NOW AVAILABLE

DOE launched its Controlled Unclassified Information (CUI) program in early 2022 by way of DOE O 471.7, which implements federal regulations requiring standards for consistency in the identification, protection and sharing of CUI government-wide. On June 27th, LANL issued P204-1 Rev 7, Sensitive Unclassified Information, which incorporates DOE's CUI requirements in DOE O 471.7. UTrain Course

#57950, *Controlled Unclassified Information Overview*, is now available and will be assigned to all laboratory employees. For more information, see this [article](#).

AI RESEARCH GUIDES AT RESEARCH LIBRARY

The Research Library has just released several new research guides on artificial intelligence (AI) and machine learning (ML). These comprehensive guides are designed to help you navigate the complex landscape of AI and ML and were developed in conjunction with the 2024 Research Library AI Research Workshop Series.

- Data Processing for AI
- Generative AI in Research Papers
- Introduction to AI Literacy and Generative AI Tools
- Navigating the Ethical Landscape of AI
- Navigating the Legal Landscape of Creativity in the Age of AI
- Retrieval Augmented Generation (RAG): from the Basics to Advanced Topics
- Social Bias in AI
- Unlocking AI: Prompt Engineering.

For more information, see this [article](#).

SERVICENOW REQUEST FORMS AVAILABLE FOR EDRMS/ERMS AND APROOVE APPLICATIONS

Requesting access and reporting incidents for EDRMS/ERMS and Aproove applications can now be done via [ServiceNow](#). This is a streamlined process to report feature requests for these applications and improve the overall user experience.



TRAINING & QUALIFICATION

Courses, Seminars, Programs

Note on Training Registration emails: When you sign up for a class in UTrain, you will receive an email that is generated by UTrain upon registration and again on the day of or before the class which will include the link to join the Teams meeting (for classes hosted online). **WARNING: To get the Teams link email you must register in UTrain. The email will NOT automatically enter an event on your calendar in Outlook. Please block your own calendar.** To receive credit for the course, you are required to log into the Teams meeting using a computer that has voice and chat capabilities (for classes hosted online). Do not use a mobile device to join the class; if you do so you will not be able to receive credit. For any questions, please email the Training team at es-do-tng@lanl.gov.

CoE ASME B31.3 Process Piping Code, #53900 – Aug 12-15, 19-22 (M-Tr, must attend all 8 sessions), 2:00-3:30 pm, Teams

Ari Swartz is leading this instructor-led course to familiarize participants with ASME B31.3 Process Piping Code as related to the duties of a Pressure Safety Officer.

CoE Submittal Review for Design Engineers, #57893 – Aug 15, 9:00-10:00 am, Teams

This training, led by Eric Stromberg, covers design submittal reviews.

CoE Types of Design Reviews, #50368 – Aug 22, 9:00-10:00 am, Teams

This training, led by Eric Stromberg, covers types of design reviews.

CoE Safety Basis Overview for Engineers #39564 – Aug 26, 9:30 am-11:30 pm, Teams

If you have this course in your training plan, or just want to learn about safety basis for 2 hours, then you can take this course taught by Heath McLaughlin.

ES-DO: Lightning Protection (Electrical Design Engineer), #58735 – Sep 5, 9:00-10:00 am, Teams

This training, led by Eric Stromberg, covers lighting protection systems.

CoE Building Systems B31.9, #56239 – Sep 16-19, 23-26 (M-Tr, must attend all 8 sessions), 2:00-3:30 pm, Teams

Ari Swartz is leading this instructor-led course to familiarize participants with ASME B31.9 Building Services Piping Code and its real applications.

CoE: Design Engineer Voltage Drop Duty Area 9, #58421 – Sep 19, 9:00-11:00 am, Teams

Eric Stromberg is leading this instructor-led course. It is required for completion of Duty Area 9 for DE qualification of Electrical Engineers (per UTrain curricula 14186).

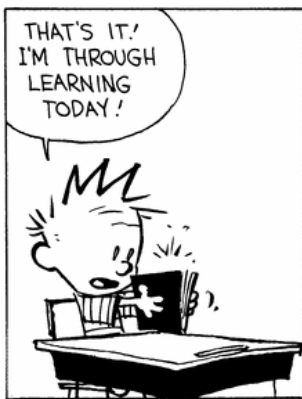
CoE Commercial Grade Dedication (CGD) - Preparers Course #30727 - Sep 25, 8:00 am - 4:00 pm, Teams

For those of you who will serve as LANL CGD Preparers including Procurement engineers, select CSEs and Quality SMEs, Course #30727 is required (#30726 is a prerequisite). **NOTE: Historically, this course is only offered twice a year, so plan accordingly!**

For any questions, contact instructor John Lamendola.

Onboarding Training Courses by CoE Office, Teams:

- COE ES LANL Organization and Engineering Divisions Introduction #54659, Aug 7, Aug 21, 10.30 - 11.30 am; Sep 4, Sep 18, 10.00 - 11.00 am
- COE Engineering Initial Onboarding #54864, Aug 7, Aug 21, Sep 4, Sep 18, 10 - 10.30 am.



© 1993 Thomson Distribution by Andrews McMeel Syndication



T&Q Admin matters

E-mail for CoE Training: es-do-tng@lanl.gov

Click e-mail address above for help with COE training issues like getting registered, missing credit, etc. Goes to the whole team: Stan Hayes, Nick Jones, Sadonna Tapia, Santana Quintana, and Chris Martinez. Alternatively, visit the Engineering Services Training and Qualifications webpage by clicking the button “[Email The Training Team](#)”. The Training and Qualifications webpage contains information and tools on training requirements and copies of the various Qualification Standards maintained by the COE office.

E-mail for CoE Qual Program: COEQuals@lanl.gov

Click e-mail address above for any help with COE quals such as CSE, PrE, Design, Project, PSO, FDAR, and other qualified positions (and also SHR matters for CSEs). Goes to Deb Cushner, Jess Blea, and Barb Dela Cruz.

Instructor-Led Course Request/Registration Guide

For live courses without a session in UTrain, there’s a [step-by-step guide](#) posted to the CoE T&Q “Resources” page on how to request a course. This places the requestor on the waitlist and notifies the training team of interest for the said live course.

LANL ENGINEERING STANDARDS ISSUED IN JULY OR SO

Engineering Standards Manual ESM [STD-342-100](#)

Chapter	Section	Title	Rev.	Date	Comments
ESM Chapter 1 - General	Z10 References	Form 2178-LIP , ALDPI Line Item Project (LIP) - specific, Subcontractor Deviation Disposition Request (SDDR)	1	7/2024	Thanks to Jason Apperson.
ESM Chapter 16 - Building	IBC-FAB	Attachment A , Offsite Structural Fabricator	2	7/29/2024	Thanks to Chief Inspector Robert Abeyta.

Code Program		Application for LBO Approval			
ESM Chapter 16 - Building Code Program	IBC-TIA	FM01 , Testing and/or Inspection Agency Application	0	7/29/2024	New! Also, thanks to Robert Abeyta.
ESM Chapter 17 - Pressure Safety	Chapter References and Resources	ASME Code Unlisted Component Evals folder of previous UCEs (NEW)	-	-	Living collection of previous CPSO-approved UCEs posted to SharePoint here . Thanks to Pressure Safety Alt POC Rob Payment, Conrad Soren, Leni Moore, and Pressure Safety POC Ari Swartz.

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

Thanks to Christina Salazar-Barnes for formatting these specification sections and Neha Gidwani for coordinating all these updates with the POCs!

Section Number	Rev.	Section Title	Effective	Comments
01 4525	0	Nondestructive Examination (NDE) Requirements	8/6/2024	NEW! Initial issue expanding and clarifying NDE expectations currently in Sections 01 4444 and 01 4455, which are being revised to refer to this section. Thanks to NDE POC David Harvey, Ari Swartz, Rob Payment, Dan Tunney, Jeremy Valentine, Tobin Oruch and Neha Gidwani.
01 4731	2	Flange Assembly for ASME B31 Systems	7/30/2024	Includes updated ESM Ch 17 references, cited sections, streamlined Part 3 and minor editorial updates. Thanks to Pressure Safety POC Ari Swartz and Alt Pressure Safety POC Rob Payment.
07 0553	0	Fire and Smoke Assembly Identification	7/17/2024	New spec section issued! Thanks to Fire POC Todd Smith and Fire Protection.
07 8400	7	Firestopping	7/17/2024	Includes major revision to align with commercial industry practice. Thanks to Fire POC Todd Smith, Scott McMurtrey, and Greg Shino.

10 4400	3	Fire Protection Specialties	7/18/2024	Includes major revision to align with commercial industry practice. Thanks to Fire POC Todd Smith, Scott McMurtrey, and Greg Shino.
23 1123	6	Facility Natural-Gas Piping	8/1/2024	Includes minor editorial updates. Thanks to Alt Pressure Safety POC Rob Payment and Pressure Safety POC Ari Swartz.
23 3101	2	HVAC Ducts	7/9/2024	Includes reference information for ML-1 and ML-2 duct leakage requirements and foam sheet duct liner specifications. Thanks to Mechanical POC Michael Ladach and Alt Mechanical POC Todd Smith.
23 3300	3	Air Duct Accessories	7/9/2024	Includes requirements for industrial control and ceiling radiation dampers. Thanks to Mechanical POC Michael Ladach and Alt Mechanical POC Todd Smith.
23 6200	2	Packaged Compressor and Condensor Units	7/24/24	Includes updates to manufacturers, refrigerant types, notes on use of variable speed compressors and minor editorial updates. Thanks to Mechanical POC Michael Ladach and Alt Mechanical POC Todd Smith.
23 7413	4	Packaged, Outdoor, Central-Station Air-Handling Units	7/24/24	Includes updates to manufacturers, fan types, notes on use of variable speed compressors and minor editorial updates. Thanks to Mechanical POC Michael Ladach and Alt Mechanical POC Todd Smith.

LANL Engineering Standards Admin matters

E-mail for COE Eng Stds: engstandards@lanl.gov

Click e-mail address above for any general questions. Goes to the whole team: Tobin Oruch, Alan Yaeger, Neha Gidwani and Christina Salazar-Barnes. Alternatively, visit the [CoE](#) or [Engineering Standards](#) webpage and click on the email under the Engineering Standards team. Of course, if your need is discipline-specific, then it's best to contact the Standards POC for the corresponding ESM chapter shown on that [webpage](#).



LANL ENGINEERING PROCESSES CHANGES

No updates this month.

LANL Engineering Processes Admin matters

E-mail for COE Eng Processes: COE-APs@lanl.gov

Click e-mail address above for any questions related to Administrative Procedures. Goes to Azupuri Kaba (Kaba), Gabriel Herrera, Beau Portillo, and Christina Salazar-Barnes. Alternatively, visit the [CoE](#) or [Engineering Procedures](#) webpage and click on the email under the Engineering Processes team.

NATIONAL STANDARDS ACTION

[Online National Codes & Standards](#) (Accuris Eng Workbench [EWB], formerly IHS)

[ASTM E1557](#), **Standard Classification for Building Elements and Related Sitework—UNIFORMAT II**

Publication Date: **6/1/2009**

Reaffirmed/Reapproved Date: **(R 2024)**

Type of Change: **Reaffirmed/Reapproved**

LANL Note: The Standards follow this for ESM and Standard Detail document numbering, as does BUILDER and other programs.

DOE TECHNICAL STANDARDS ACTION

[Tech Stds Program postings](#) are listed on the [Technical Standards Portal](#).

[DOE-HDBK-1221-2024, Suspect/Counterfeit Items Resource Handbook](#)

MSS DOCUMENT ACTION

[Operation and Maintenance Criterion and related Preventative Maintenance Instructions](#) (PMI) are standards with which system and plant engineers should be familiar. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities. Questions? Contact the document author shown on its approval page.

Below are recent changes issued by Maintenance and Site Services Division per Jeremy Vonharders. Click [here](#) to access. If you have issues with SharePoint sites, use a Microsoft browser (e.g., Edge) to access them.



MSS-GUIDE-052: LANL AED Program Desktop Guide

- Initial Issue

O&M 420 Rev 3: Steam Traps

- Modified Management Level and Inverted Bucket Steam Trap definitions.

- Removed variance request language and responsibility from 4.3, *MSS Division Leader*.
- Changed title of responsibilities from SMPOR to SDPOC in Section 4.6.
- Changed reference from AP-341-506 to AP-341-517 in Section 5.1.2, *Failed Steam Traps*, to reflect the latest applicable LANL code.
- Added Basis reference after 5.1.3, *Water Hammer*.
- Removed variance language from 6.0, *Requirements*.
- Added clarification to 6.1, *Operations Requirements*, for condensate build up.
- Modified first paragraph of 6.2.1, *Trap Testing*, and added a basis reference in this section.
- Removed variance language from 7.0, *Recommendations*.
- Removed Section 9.0, *Required Documentation*, to comply with latest template.
- Added ASME PTC 39-2005 and DOE Operating Experience Summary references in Section 9.0, *References*.
- Added solutions to Attachment 2, *Steam Trap Troubleshooting*.

O&M 430 R1: Oxygen Deficiency Monitor Systems

- Frequencies lower than six months were moved to six months and monthly checks of RKI are now to be performed by the calibration team.
- Deleted six steps from Section 5.1.1, *Oxygen Concentration Levels and Effects*, to comply with OSH-ISH recommendations.
- Deleted Section 5.1.3, *Oxygen Displacing/Depleting Gases*, to comply with OSH-ISH recommendations.
- Added verbiage to Section 5.1.6, *Sensors*, to describe purpose of sensors.
- Added Section 6.2.8, *Post-Maintenance Requirements in Case of Alarm Malfunction*.
- Removed hyperlinks.

O&M 502 Rev 4: Exterior Security Lighting Systems

- Updated document to the current O&M template revision, including removing the "Required Documentation" section.
- Removed references to 2019 NFPA 70B.
- Removed 2017 NFPA 70 from Section 9.0.
- Added in a requirement from NFPA 70E.

PMI 404-A Rev 2: Gas Furnaces or Unit Heaters Inspection, Testing, and Maintenance

- Removed redundant steps and steps that are no longer performed from 404-A.001, *Yearly Gas Furnace or Unit Heater Inspection*.
- Added new checklist 404-A.002, *Annual Heating-Season Maintenance*.

PMI 410-A Rev 3: Air Moving Equipment Six-Month Preventative Maintenance

- Added step to 1.0, *Pre-Maintenance Activities*.
- Organized steps so that each includes one action per step rather than multiple actions/items per step.
- Changed notes throughout to action steps when notes included specific action steps.
- Changed Section 2.0 title from Air Moving Unit to Fan Drive Systems to align with Rev 3 of O&M 410
- Added steps 2.7 through 2.18 from Rev 3 of O&M 410.

PMI 430-E Rev 2: RKI OX-600 Indoor Oxygen Deficiency Monitor Systems Inspection, Testing and Calibration

- Changed 430-E.001 to indicate that the monthly calibration must be performed by the calibration team and not the Oxygen Monitor owner based off O&M revision.

PMI 721-A Rev 3: Wet Automatic Sprinkler System Monthly Inspections

- Added steps 1.2 through 1.9 to Section 1.0, *Pre-Maintenance Activities*, to align with Rev. 9 of O&M 721.
- Added steps 2.1 through 2.2.6 to Section 2.0, *Visual Inspection*, to align with Rev. 9 of O&M 721.

PMI 721-B Rev 4: Wet Automatic Sprinkler Systems Quarterly Inspections

- Revised steps in Section 2.0, *Inspection*, to align with Rev. 9 of O&M 721.

PMI 721-C Rev 4: Wet Automatic Sprinkler Systems Six-Month Inspections

- Revised steps in Section 2.0, *Inspection*, to align with Rev. 9 of O&M 721.
- Added additional steps in 3.0, *Testing*, to align with Rev 9 of O&M 721.
- Revised steps in Section 6.0, *Post-Maintenance Testing*, to align with Rev 9 of O&M 721.

PMI 721-D Rev 8: Wet Automatic Sprinkler Systems Yearly Inspection

- Revised steps in Section 2.0, *Inspection*, to align with Rev. 9 of O&M 721.
- Revised steps in Section 3.0, *Maintenance*, to align with Rev 9 of O&M 721.
- Added step 3.4 in Section 3.0, *Maintenance*, to replace annual sprinklers and automatic spray nozzles.
- Revised steps in Section 4.0, *Testing*, to align with Rev 9 of O&M 721.

PMI 721-E Rev 5: Wet Automatic Sprinkler Systems Five-Year Inspections

- Revised steps in Section 2.0, *Inspection*, to align with Rev. 9 of O&M 721.
- Revised steps in Section 3.0, *Maintenance*, to align with Rev 9 of O&M 721.
- Revised steps in Section 4.0, *Testing*, to align with Rev 9 of O&M 721.

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED



[STRUCTURE magazine | “Soft Errors” and “Unknown Unknowns”](#)

The article discusses the critical importance of considering both known and unknown risks in engineering projects, emphasizing that even experienced firms can face significant liabilities if they overlook key factors. It recounts a specific case where a firm designed a warehouse floor in a floodplain without fully understanding the equipment load requirements, leading to unexpected damage and their first insurance claim after 20 years.

Termed as a "soft error," this incident highlights how complying with codes alone isn't always sufficient to prevent costly issues. The author reflects on the broader implications for risk management, noting that many claims arise not from design errors but from unforeseen circumstances or incomplete project design criteria. They stress the need for thorough pre-project reviews to identify potential "known unknowns" and strategies to mitigate "unknown unknowns," which are unforeseeable combinations of factors.

Lessons learned include the importance of detailed client communication, comprehensive project vetting, and involving multiple perspectives within the firm to anticipate risks. The article concludes by advocating for proactive measures such as improved client screening, thorough project assessments, and effective contract management to enhance risk awareness and minimize liabilities in engineering projects.

At LANL, we have a robust process for developing detailed requirements and criteria documents (RCD) that follow the requirements from the ESM and include the customer's input. In addition, the project engineers coordinate between the design agency and customer to mitigate problems and encourage a clear line of communication. The bottom line is that communication is always key to mitigating the "known unknowns" and "unknown unknowns".

LAST MONTH'S UPDATE TOPICS

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

- New ES-OPS Group Lead
- New AP Manager
- Design Engineer Qualification Standards
- Training & Qualification
- LANL Engineering Standards Issued in June or so
- LANL Engineering Processes Changes
- National Standards Action
- DOE Technical Standards Action
- MSS Document Action
- When Good Conduct of Engineering Isn't Followed

The views expressed in this email are not necessarily those of the Engineering Standards Team's employer.

To request a change to this newsletter's distribution or to send comments/suggestions, please email engstandards@lanl.gov.

This newsletter may contain content appropriate for LANL and business partners only, not intended for broad public release.

