
ENGINEERING STANDARDS UPDATE

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

Topics this month:

- **Training & Qualification**
- **Tom Wando Returns to ES-Div**
- **Lead SME (LSME) Designations in ES**
- **Concrete Placements — Avoid a Slump**
- **Data Call for National Standards Committee Work**
- **LANL Standards Issued in Sept**
- **National Standards Action**
- **Fire Prevention Week – 100th Observance**
- **MSS Document Changes**
- **When Good Conduct of Engineering Isn't Followed**

Note: This newsletter has hyperlinks all over but their formatting may not show, so please hover your cursor where you might expect one.

It's Balloon Fiesta time, so:

**TRAINING & QUALIFICATION****Safety Basis for Engineers, Course 39564, Wed, Oct 5, 12-2 pm, MSTeams**

Course is required for and will help CSEs and PrEs learn what they need to know about Safety Basis to prepare for their oral boards and their engineering duties. Has lots of TA55 examples but is generally applicable to any nuclear facility.

To sign up, please go into UTrain and search for course #39564. There you will find the October 5th session and you can register for it there. UTrain will provide you the link. **PLEASE DO NOT SIGN UP TO COURSE WITHOUT REGISTERING WITHIN UTRAIN!** You will not be granted credit unless you have registered in UTrain. If you have any questions regarding this training, please reach out to Joy Getha, 5-9586, jlgetha@lanl.gov.

ESM Chapter 21 Software -- Overview and Owners Courses – Series Begins Nov 15

A few of you are new “Owners” of nuclear safety or other ML-1, -2, or -3 software (installed in a system, or maybe for design/analysis). If you follow ESM Chapter 21 Software then you need to

take training on the chapter. The managers (including FDARs) of Owners only need the overview.

So...if you, in fact, need training, please register in UTrain for the course(s) below. If you're not sure what you need, contact SME/instructor Joy Getha, 5-9586, jlgetha@lanl.gov.

- 38047 ESM Chapter 21 Software Overview Course 3 hours. (RLMs and Owners): Tuesday, November 15th, from 1 - 4 PM; location TBD.

- 34048 ESM Chapter 21 Software Owner's Course 3 additional hours (just Owners return for this): Thursday, November 17th, also from 1 - 4 PM, location TBD.

Joy Getha wrote "Please make every effort to set aside these times to take these courses. They may not be offered again for the foreseeable future."

Registering for UTrain Courses: Go to **UTrain**, search on course, select and enroll. Disenroll if you have to bail. [AEs can also register for some; use token (CryptoCard) or contact ES training person Stan Hayes (sehayes@lanl.gov) or Nick Jones, (n.jones@lanl.gov) with Z number. For any UTrain or Teams issues contact Stan Hayes or Nick Jones. The instructor may have to invite you to Teams or Webex specifically just before starting time.

Halloween will be here soon, so:



TOM WANDO RETURNS TO ES-DIV

Announced by Mike Richardson last week, Tom Wando, in PIE-DO the past few months, is now the acting Deputy Division Leader for the Project Delivery groups. Organization chart:

<https://int.lanl.gov/org/ddops/aldfo/nuclear-safety/engineering-services/assets/docs/ES-DO-Orq-Chart.pdf>

LEAD SME (LSME) DESIGNATIONS IN ES

In another announcement from Mike last week but mainly of interest to ES, he has designated one or two more senior engineers to mentor the others of their discipline now that the former discipline-oriented teams are distributed to the Project Delivery groups.

It's a collateral duty to their normal job in one of the three project delivery groups, not a separate job position. The ES organization chart lists the LSMEs. The memo also says, in part:

The ES LSME disciplines currently include:

- Architectural, CAD
- Civil
- Electrical
- Fire Protection
- Instrumentation and Controls (I&C)
- Mechanical
- Non-Destructive Evaluation (NDE)
- Pressure Safety
- Project Engineering
- Structural
- Welding

The designation of LSMEs does not affect the use of the SME concept/term in other matters such as IBC/IEBC SME listing, ESM SMEs (or POCs), or SMEs in a very general sense — these remain.

CONCRETE PLACEMENTS — AVOID A SLUMP

LA Transit Mix is switching over to a whole new set of design mixes, so projects underway with yet-to-be-made placements will have to revise their Specification to require the new mixes. Refer to [VAR-10580, Concrete Placements with New Pozzolan Design Mixes Pending Final Results](#) which is posted with LANL Master Spec Section 03 3001, Reinforced Concrete and Section 03 3053, Miscellaneous Cast-In-Place Concrete.

It allows low-risk projects (ML-3 or ML-4 and per the judgement of Structural Specs POC Mike Denlinger) to continue concrete operations based on preliminary test data and his concurrence. The VAR includes all the information necessary to write the FCRs needed, and there are already a couple by Emma Starrett for PI's 105165 and 105169 and maybe others in the Delta FCR system.

The VAR also discusses how the revision of the Master Sections (mid-late October target) will then enable projects to edit and adopt the new spec section if they prefer that to editing the existing one.

For nuclear work, Section 03 3021 Reinforced Concrete - High Confidence is also affected. New mixes will have to be qualified for such use (VAR-10580 doesn't cover this), so the old (Rev. 4) Section was removed from the website.

The backstory on all this is that LATM's supply of fly ash was ending given the closure of the San Juan Generating Station on September 28. Just in case you were pozzolan over why 😊

DATA CALL FOR NATIONAL STANDARDS COMMITTEE WORK

The annual effort to catalog the work being performed by LANL personnel for non-government standards has begun, led by Christine Honey. The approximately 65 known people's efforts have been updated, and a labwide solicitation for others in LANL Today is forthcoming. Every year we report this volunteer work to DOE-HQ; it's then sent to the OMB per public law. DOE also documents this work in "DOE-TSL-4, Directory of DOE and Contractor Personnel Involved in Non-Government Standards Activities." LANL participation is among the highest of the DOE sites.

Those doing such work (please let choney@lanl.gov know of updates, like others doing such work):

Kelsey M. Amundson	David P. Harvey	Murray E. Moore
Randall D. Austin	S. Davis Herring	Benjamin E. Nelson
Luiz Bertelli	Jon E. (Rick) Hinckley	Raymond T. Newell
David A. Bingham	Patrick W. Hochanadel	Donald Q. O'Sullivan
Kelly L. Bingham	Daniel A. Javernick	Donivan R. Porterfield
David A. Bruggeman	Benjamin Karmiol	Jose E. Rodriguez
Joanne L. Budzien	Theodore J. Keppner	Christopher Romero
Joanna L. Casson	Paul N. Kirpes	Taunia J. Sandquist
Brittain J. Catron	John A. Klumpp	Scott R. Salisbury
John T. Ciolek Jr.	Aaron C. Koskelo	Michael W. Salmon
Paul J. Contreras	Brett R. Krueger	Emily S. Schultz-Fellenz
Theresa E. Cutler	Joel A. Kulesza	Michelle E. Silva
Sara de Souza Zanotta Dumit	Robert C. Little	Dusan Spernjak
Shannan D. Diffey	Li-Ta (Ollie) Lo	Phillip H. Stauffer
Keenan T. Dotson	Jean-Francois Lucchini	Jacob Stinnett
Donald J. Dudziak	Eric R. MacFarlane	Jared T. Stritzinger
Ari Foley	Michael W. Mallett	Eric R. Stromberg
David P. Fuehne	Kattathu J. Mathew	Katrina A. Stults
Milan S. Gadd	Carl A. Mazzola	Ari Ben Swartz
Michael (Misha) Gallegos	Robert B. Merl	Thomas E. Tierney IV
Joshem Gibson	Murray E. Moore	Alfio G. Torrasi
Lloyd B. Gordon	Benjamin E. Nelson	Brandon M. Wilson
	Raymond T. Newell	Ning Zhang

LANL STANDARDS ISSUED IN SEPT <https://engstandards.lanl.gov/>
Engineering Standards Manual ESM [STD-342-100](#)

We've been busy, especially Christina Salazar-Barnes.

ESM Chapter(s)	Section	Title	Rev.	Date	Comments
2 & 16 – Fire Protection and IBC Program	all	NEW reference: Fire Protection & Life Safety Triggers for FP Office Review – FDAR Guidance	0	9/8/2022	Excerpt: “The review of small scope Alteration Level 1 or 2A projects by the FP Office is typically a review of sketches, material submittals, and proposed furniture or equipment layouts. The intent is to confirm that the replacement or upgraded material or system reconfiguration meets applicable requirements to confirm that the selected product complies fire code requirements and does not negatively other building fire protection or life safety features. Matters with fire protection or life safety implications: ...” Thanks to Fire POC Keenan Dotson, FP AHJ Jason Kemp.
6 - Mechanical	D30	D30, HVAC, Heating, Cooling, HVAC Distribution and TAB	6	9/22/2022	Added Smart Labs guidance, packaged equipment controls integration, use of condensing boilers. Updated NATS table including DOE-STD-1269 and DOE-HDBK-1169, plus AG-1 applicability to non-credited ventilation systems per Variance 10298. Other changes. Added Requirements ID Log references and moved most bases footnotes to log posted with chapter. Thanks to POC Michael Ladach.
13 – Welding, Joining, & NDE	Vol 6 NDE	NEW ref: Approved NDE Training Suppliers	0	9/15/2022	Thanks to NDE POC David Harvey.
14 - Sustainable Design	all	Sustainable Design of Facilities	11	9/26/2022	Adopted ASHRAE 90.1-2016 (and 2019 when mandated) to align with 2018 IECC. Mandated new 2020 GPs. Added Zero Carbon Emissions Ready requirements per EO 14057. Added Att 2 on metering per VAR-10538. Added Definitions and Bases for Requirements; clarified requirements throughout, moved much guidance to references maintained on chapter webpage. Deleted references to specific versions. Added Requirements ID Log references and moved bases/footnotes to log (LANL internal-use log posted with chapter). Thanks to POC Dee Bangert and others.

14 - Sustainable Design	all	NEW: Att. 2, Utility Metering Requirements	0	9/26/2022	Supersedes VAR-10538 on same. Thanks to POC Dee Bangert, Maura Miller, others in UI.
16 – IBC Program	IBC-GEN, -IP, etc.	VAR-10564 - Test and Inspection Plan (TIP) Development Responsibility	0	9/6/2022	For new project starts, responsibility for the development of the TIP is changed from the Design Professional in Responsible Charge (DPIRC) to the subcontractor for such projects. For self-performed work, responsibility is changed to the responsible engineer. Thanks to Christine Honey.
16 – IBC Program	IBC-TIA	Test & Inspection Agency Approval Process Reference added: Nondestructive Examination Agency Subcontractor/Supplier Assessment for LBO Approval (LANL only)	-	9/1/2022	Thanks to NDE POC David Harvey.
16 – IBC Program	All (esp. TIA, FAB)	Reference: Listing of LBO-Approved IBC Testing, NDE, and Inspection Agencies; Fabricators; and Products	-	9/30/2022	Added Valley Joist, several nationwide NDE firms, other updates. Thanks to Ch. Inspector Tim Donovan, NDE POC David Harvey.
17 – Pressure Safety	GEN-2 and ASME-1	VAR-10545, Application of NFPA 54 and NFPA 58 to Fuel Gas	0	8/29/2022	Thanks to POC Ari Swartz.
	ADMIN-3	ADMIN-3-FM01, Relief Device Procurement Pre-approval	4	9/6/2022	Added FOD location/ Category. Thanks to POC Ari Swartz.
		ADMIN-3-FM02, ASME Vessel Pre-approval	2		
		ADMIN-3-FM03, Steam and Boiler Relief Device Procurement Pre-approval	3		
QCSM	R Stamp and FIA certs for 2022 from NBB	-	-	Thanks to Randy Austin, POC Ari Swartz.	

Likely in October: Revision of (1) ESM Chapter 7 Electrical, Section D5020, Lighting & Branch Circuit Wiring; (2) ESM Chapter 9, Security; and the Tailored Standards Manual.

Master Spec Sections STD-342-200

Spec Number	Rev.	Spec Title	Effective	Summary
01 4000	8	Quality Requirements - Non-nuclear	9/6/2022	Removed QA program requirements to deconflict with Exhibit H. Test & Inspection Plan requirements and roles revised. Clarified design change and NCR process to account for unexpected time-sensitive field conditions. Added calibration and setpoint requirements. Other changes throughout. Thanks to Darren Meadows, Karen Marsh, others.
03 3001	15	Reinforced Concrete	9/30/2022	VAR-10580, Concrete Placements with New Pozzolan Design Mixes Pending Final Results See article above; thanks to POC Mike Denlinger.
03 3053	8	Miscellaneous Cast-In-Place Concrete		
03 3021	4	Reinforced Concrete - High Confidence	-	Temporarily withdrawn due to mix unavailability; contact spec's POC (Denlinger), or maybe Ben Winter , for more information

Finally, you can't improve what you don't measure so when the Standards Team wraps another FY we total the work. This past fiscal year, we:

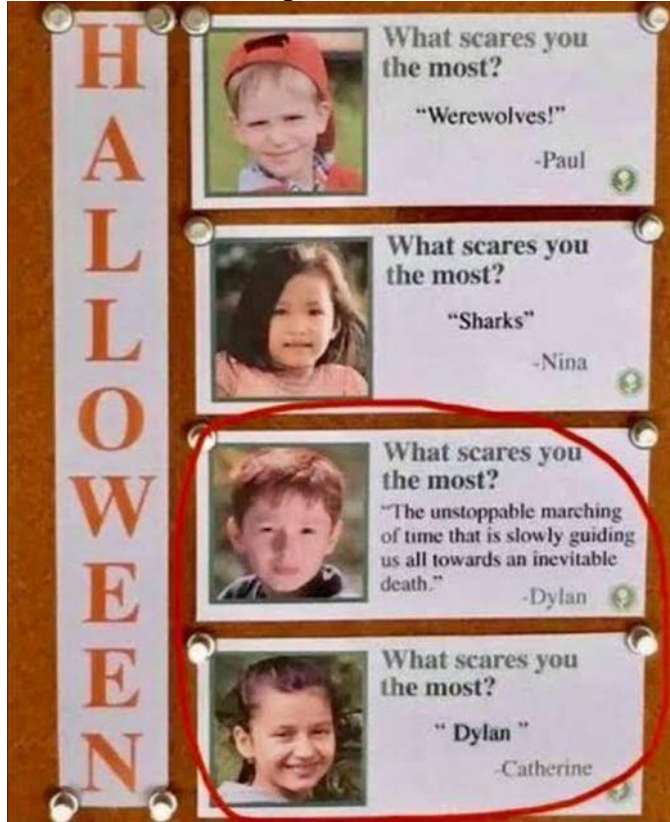
Standards revised or created:

- 44 ESM Chapter, Section, or subtier documents (total now 375 documents)
- 34 LANL Master Specs; total now 195
- 3 Std Details updates (total now 260 sheets)

Offered the following courses:

- Intro to LANL Eng Standards (4 times)
- ESM Ch 21 Software Intro, then Owners (twice)
- Electrical Standards (once, but moving back to about quarterly)

Halloween still coming...



NATIONAL STANDARDS ACTION

Per IHS Eng Workbench subscription via Research Library

Document number: [ACI CODE-355.2](#), **Post-Installed Mechanical Anchors in Concrete—
Qualification Requirements and Commentary**

Publication Date: **September 2022**

Type of Change: **Complete Revision**

Document number: [ASME B31.1](#), **Power Piping**

Publication Date: **10/10/2022**

LANL notes: ASME (and LANL) policy is that there's a 6-month grace period before new ASME codes must be used. Also, ASME employs digital rights management, so pdf downloads say they're only good for 120 days, then have to repeat d/l. Finally, see previous Updates on getting FileOpen browser plug-in for DRM files.

NFPA matters – LANL Notes

- Required NFPA versions for projects are per ESM Ch 2 Att. A (except NFPA 70/NEC; see Ch 16 IBC-GEN Att. A ... still on 2017 for a bit longer, 2020 soon).
- **Access:** Users can read online, not download pdfs. This occasionally causes an issue with LANL's three NFPA licenses occasionally being tied-up and denying access. Please help alleviate this by logging off when you're not actively using EWB (this goes for all societies). To log off, click your name (upper-right) and log off from drop-down. As another workaround, users can always register on NFPA.org and have read-only there just as they have it on EWB. If you need them a lot, you can subscribe to NFPA LiNK for \$89/year.

Document number: [NFPA 70](#), **National Electrical Code**

Publication Date: **2023**

Type of Change: **Active Status**

Document number: [NFPA 72](#), **National Fire Alarm and Signaling Code**

Publication Date: **2022**

Type of Change: **Complete Revision**

FIRE PREVENTION WEEK – 100TH OBSERVANCE

Speaking of NFPA, it's next week 10/9-15, the week that includes the Great Chicago Fire's worst day of Oct 9, 1871.

<https://www.nfpa.org/Events/Events/Fire-Prevention-Week>

MSS DOCUMENT CHANGES

Below are recent changes issued by Maintenance and Site Services Division per Jeremy vonHarders.

Access here:

<https://logistics.lanl.gov/MSS/layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx>

AP-WORK-004 Revision 18: Work Performance (MSS-WC)

- Added provisions for hold point notifications.

O&Ms: 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. If you have issues with SharePoint sites use a Microsoft browser to access them.

MSS-CE has issued the below PMI Documents:

PMI 726-B Revision 2: Dry Automatic Sprinkler Systems Weekly Inspection, Testing and Maintenance

- Added “Testing and Maintenance” to title
- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added steps for valve enclosure rooms
- Added Section 3 (replace nitrogen bottle)
- Aligned Section 4 Impairments and Section 5 Post-Maintenance Activities with the rest of the 726 PMI series.
- Changed to only require signatures of 2 inspectors

PMI 726-C Revision 2: Dry Automatic Sprinkler Systems Monthly Inspection, Testing and Maintenance

- Added “and Maintenance” to title
- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added step 2.3.2 “record nitrogen gauge pressure”
- Added Section 3 (replace nitrogen bottle)
- Aligned Section 4 Impairments and Section 5 Post-Maintenance Activities with the rest of the 726 PMI series.
- Changed to only require signatures of 3 inspectors

PMI 726-D Revision 4: Dry Automatic Sprinkler Systems Quarterly Inspection, Testing and Maintenance

- Added “and Maintenance” to title
- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added Section 1 Note: Steps can be performed out of sequence
- Added step 2.3.2 Record nitrogen gauge pressure
- Added section 2.4 Alarm Device Inspection and checklist table
- Added step 2.6.5 valve enclosure room less than 40°F
- Aligned Section 4 Post-Maintenance Testing, Section 5 Impairments, and Section 5 Post-Maintenance Activities with the rest of the 726 PMI series.
- Changed to only require signatures of 3 inspectors

PMI 726-E Revision 6: Dry Automatic Sprinkler Systems Six-Month Inspection, Testing and Maintenance

- Removed Note regarding aboveground system to be pressurized higher than the underground system.
- Removed IF/THEN statement regarding raising the pressure in the aboveground system
- Changed “inspector’s test valve” to “alarm test valve”

- Added “and Maintenance” to title
- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added step 2.3.2 Record nitrogen gauge pressure
- Added step 2.6.5 valve enclosure room less than 40°F
- Changed EOC to FACP in section 3.1.2
- Added section 3.1.2 Note: PIVs shall be opened until spring or torsion is felt in the rod
- Aligned section 3.6 Replace Nitrogen Bottle with the rest of the 726 PMI series

PMI 726-F Revision 6: Dry Automatic Sprinkler Systems Yearly Inspection, Testing and Maintenance

- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added section 1 note: steps can be performed out of sequence
- Added section 1 note: 700-A.003 in/out of service checklist
- Added step 2.3.2 Record nitrogen gauge pressure
- Added section 2.5 Alarm Device Inspection and checklist table
- Added step 2.6.5 valve enclosure room less than 40°F
- Added section 2.11 Hydraulic Nameplate
- Changed EOC to FACP in section 3
- Added section 3.9 note: internal inspection of valves every 5 years
- Added steps to 3.10 Reset Dry Pipe Valve
- Aligned section 3.11 Replace Nitrogen Bottle with the rest of the 726 PMI series
- Aligned Section 4 Post-Maintenance Testing, Section 5 Impairments, and Section 6 Post-Maintenance Activities with the rest of the 726 PMI series.
- Changed to require signatures of 4 inspectors

PMI 726-G Revision 5: Dry Automatic Sprinkler Systems 3-Year Inspection, Testing and Maintenance

- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added section 1 note: steps can be performed out of sequence
- Added section 1 note: 700-A.003 in/out of service checklist
- Added step 2.3.2 Record nitrogen gauge pressure
- Added section 2.5 Alarm Device Inspection and checklist table
- Added step 2.6.5 valve enclosure room less than 40°F
- Added section 2.10 Hydraulic Nameplate
- Changed EOC to FACP in section 3
- Added section 3.4 note: dry pipe systems tested every 3 years
- Added section 3.10 note: internal inspections of alarm valves every 5 years
- Added Section 3.5 System Leak Test
- Added steps to 3.11 Reset Dry Pipe Valve
- Aligned section 3.12 Replace Nitrogen Bottle with the rest of the 726 PMI series
- Aligned Section 4 Post-Maintenance Testing, Section 5 Impairments, and Section 6 Post-Maintenance Activities with the rest of the 726 PMI series.
- Changed to require signatures of 4 inspectors

PMI 726-H Revision 6: Dry Automatic Sprinkler Systems 5-Year Inspection, Testing and Maintenance

- Moved “work order/equipment ID” out of header to page 1 of PMI
- Added section 1 note: steps can be performed out of sequence
- Added section 1 note: 700-A.003 in/out of service checklist
- Added step 2.3.2 Record nitrogen gauge pressure
- Added section 2.4 Alarm Device Inspection and checklist table
- Added section 2.10 Hydraulic Nameplate
- Changed EOC to FACP in section 3
- Added section 3.4 note: dry pipe systems tested every 3 years
- Added section 3.5 System Leak Test
- Added section 3.10 note: internal inspections of alarm valves every 5 years
- Added steps to 3.10 Internal Inspections
- Added steps to 3.11 Reset Dry Pipe Valve
- Aligned section 3.12 Replace Nitrogen Bottle with the rest of the 726 PMI series
- Aligned Section 4 Post-Maintenance Testing, Section 5 Impairments, and Section 6 Post-Maintenance Activities with the rest of the 726 PMI series.
- Changed to require signatures of 4 inspectors

WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED

LAST MONTH'S UPDATE TOPICS

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

- Training & Qualification (Stds, CGD)
- ES-Div Management Changes (!); LANL Building Official
- LANL Standards Issued in August or so
- National Standards Action
- When Good Conduct of Engineering Isn't Followed

The views expressed in this email are not necessarily those of my employer. To request a change to this newsletter's distribution, please contact me.

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