



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

October 6, 2022

MEMORANDUM TO: Lauren Gibson, Chief
License Renewal Projects Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

THRU: Emmanuel Sayoc, Project Manager
License Renewal Projects Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

FROM: Jessica Hammock, Project Manager
License Renewal Projects Branch
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE JUNE 7–8, 2022, PUBLIC MEETING TO
DISCUSS TECHNICAL TOPICS FOR THE SUBSEQUENT
LICENSE RENEWAL GUIDANCE DOCUMENT UPDATES

For

On September 7–8, 2022, an information public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff, industry representatives, and members of the public concerning the Subsequent License Renewal (SLR) guidance document updates project.

The purpose of the meeting was to:

- present, in detail, a selection of the NRC staff's technical change proposals that were deemed of high interest during the June 1, 2022, public meeting (ML22147A052);
- discuss the technical basis and supporting documentation of the proposals; and,
- gather feedback and comments from industry and members of the public on these and other areas of interest.

The NRC staff presented on the project overview, process, schedule of milestones, and the technical change proposals. The NRC staff highlighted several future opportunities for public engagement. Open discussions were held each day to provide opportunities for further discussion of existing or new topics. The meeting notice and agenda dated September 7, 2022, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML22244A195, as well as the NRC staff's presentation slides (ML22243A014), and guidance document summarized proposals (ML22243A268) are publicly available.

The meeting agenda and list of attendees can be found in Enclosures 1 and 2, respectively.

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Summary:**Fire Protection**

- Industry referenced a previous request for additional information (RAI) with respect to fire damper assemblies vs housings and requested clarification on how to approach upcoming license renewal applications. It was discussed and confirmed that current applicants should use “fire damper housing” to be clear that the housing is the passive component that serves as a fire damper that is subject to aging management.
- Under the fire protection aging management program (AMP) a comment was made by an industry member that in relation to additional trending of inspection and testing data, the industry would be amenable to the expanded trending for data that is numerical. However, for pass-fail or more qualitative data expanded trending is not as easy. Industry recommends adding more information or guidance on what the NRC expects for trending.
- For masonry walls that serve a structural and fire protection function, an industry comment was made that concrete/masonry has no “UL” fire rating. The fire protection function relates more to how well concrete wall features such as penetrations, dampers, doors, and windows, etc. perform as barrier to fire. The commenter further stated that the walls are not the limiting part of the overall fire protection. The NRC staff stated the two AMPs “Fire Protection”, and “Structures Monitoring” were both used for aging management for complementary and completion of coverage purposes. Industry recommended that the NRC staff provide more clarity on the acceptance criteria for both AMPs.
- Industry commented that the programs should be looking at the intended functions, for example, AMP Structures Monitoring for cracks, and Fire Protection for seals.
- A member of the Nuclear Engineering Institute (NEI) provided the context that they formed a task force with mechanical, electrical, and structural focus groups to review and discuss the NRC proposed updates to SLR guidance. The comments on Fire Protection were provided by members speaking on behalf of the task force.

Aging Management of Wooden Poles

- Industry commented that loss of material to wooden poles is very common, and that NRC guidance should not be made too stringent.
- Industry questioned whether insect infestation is related to aging and within license renewal space. Degradation of pole treatment may be a form of aging management within scope.
- Industry inquired whether loss of material in wooden poles was a problem the NRC was seeing across the industry or is it more gaining consistency in addressing the issue. The NRC staff stated that loss of material issues were seen so far in two subsequent license renewal applications (SLRAs), but without guidance each approach was different and resulted in RAIs. This AMP change was driven by a desire to provide consistency and clarity in addressing the issue. The NRC staff stated it would provide proper qualifiers and acceptance criteria for its AMP updates, that loss of material can be sufficiently explained by the applicant in further evaluation sections, and that the applicant can specify their own acceptance criteria.
- An industry member requested that the guidance be more qualitative like the rest of utility management, and that the NRC staff provide more justification on inspection frequencies, prescribed techniques, and acceptance criteria.

Fire Water System

- An industry member asked what component was being referred to by the AMP for fire pump suction screen inspections. The industry member gave examples of the traveling water screens or the strainers at the bottom of the fire pumps. Depending on the scope of the AMP on this, industry expressed concern that the scope may not be consistent with related National Fire Protection Association (NFPA) codes. The NRC staff agreed to clarify and examine this issue. An industry member clarified that the suction screen or strainer is for an open water system.
- An industry member made a note that the NRC should incorporate the latest version of associated NFPA codes. The NRC staff agreed to look at the matter.
- In relation to conducting flow tests on fire water hydraulic connections for multiple zones per NFPA codes, an industry member commented that NFPA codes apply to commercial buildings and not necessarily to nuclear power plants. For example, the NFPA prescribed main drain testing at each zone makes sense for commercial buildings, but this may be redundant for nuclear power plants where full flow tests at each header is normally conducted. Industry member further commented that the AMPs should not be over prescriptive but should be driven to performance requirements. The NRC staff agreed to examine the matter. The NRC staff stated it was open to industry suggestions including submittal of mark ups of current guidance as recommended changes. The recommendation should be submitted to the NRC via their respective industry representatives.
- An industry member commented that provisions to reduce sample sizes for dual or multiple units should be put in place like those in other AMPs, and that there should be an established maximum sample size.

Reactor Vessel Steel Supports, Loss of Fracture Toughness

- The NRC staff stated that the approach to reactor vessel (RV) steel supports fracture toughness aging management is to look at the whole support system and to apply risk informed insights.
- An industry member commented that the use of initial nil-ductility temperature of the RV support steel from certified material test reports would be advantageous.
- An industry member inquired whether the inappropriate use of yield stress and compressive strength from certified material test reports, as discussed in NRC Information Notice (IN) 2012-17, is relevant in the RV steel support further evaluation. The NRC staff stated that IN 2012-17 is relevant only with respect to yield stress and compressive strength as discussed in the notice, and not with respect to initial nil-ductility temperature or Charpy V-Notch data of the steel used in the RV supports.
- An industry member commented that for inaccessible sections VT-3 visual inspections provide more meaningful data than surface inspections. An NRC staff member indicated guidance is provided in ASME Code, Section IX, IWF.

Buried and Underground Piping and Tanks

- An industry member made a comment that a generic aging lessons learned (GALL) - SLR reference on high pH stress corrosion cracking needs to be removed as it relates to operating experience in the gas piping industry and is not relevant to nuclear power plant buried piping systems.
- The NRC staff stated that the revised AMP requires justification or an exception when no cementitious coatings are used for underground piping.

- An industry member made the comment that greater credit should be given to ultrasonic testing (UT) volumetric exams versus visual exams or pressure testing. Volumetric exams give more reliable information. There should also be an established maximum for piping inspections, currently this is set at 25 percent of total piping length, which can be overburdensome.
- An industry member made the comment that there are accepted test and guidelines for internal inspections of metallic pipe (e.g., visual inspections, electromagnetic testing), and that similar provisions should be provided for buried cementitious pipe.
- An industry member made the comment that buried and underground pipe corrective action require the increase in number of inspections when adverse findings are recorded, and that the inspections start ten years prior to entering the period of extended operation. The industry member stated that this inspection plan may be overly conservative, and that there may be room to loosen the recommendations. The NRC staff stated the early inspections are required to take a global look at the systems; to establish their baseline condition; to understand the system status; and to better inform the development, evaluations, and execution of AMP into the period of extended operation (PEO).
- In relation to selective leaching, an industry member made the comment that risk informed approaches and non-destructive examinations (NDE) (shown to be effective for detection) are not currently used in NRC staff guidance. The NRC staff replied by stating that discussions are being held with respect to whether NDE types can be added to the guidance.
- An industry member made the comment that soil parameter consistency across sample locations will not likely be achieved and asked what parameters the NRC staff expects. The NRC staff replied that variations are expected but that the system should be viewed generically, engineering decisions should be made, and added that the NRC staff is open to industry proposals/recommendations. These may include raw water parameters, soil corrosivity, and whether there were chemical spills.

New AMP on High-Density Polyethylene (HDPE) and Carbon Fiber Reinforced Polymer (CFRP) Piping Systems

- The NRC staff clarified that both safety and non-safety related buried CFRP and metallic piping are within scope for the new program. This AMP also looks at the structural integrity of the pipe and instances where CFRP and metallic piping interface.
- An industry member stated that a through-wall pinhole in CFRP is not a loss of pressure boundary. The NRC staff clarified that it is situational with respect to the repair type and application. An industry member requested clarification wording in the new AMP to address terminal/termination ends to eliminate confusion.
- An industry member questioned why an AMP was needed if relief requests and inspection requirements were in place. The NRC staff reiterated that the rule requires an AMP and aging management review (AMR) if aging management is required. An NRC staff member stated that they have seen instances where debonding and defects had occurred but that it wasn't discovered for a while.
- An industry member expressed satisfaction that the NRC is supportive of CFRP materials which lends to advantages such as the reduction on ongoing maintenance. The industry member cautioned that if the new AMP is onerous or burdensome it will disincentivize the industry to use the materials.

Open Technical Sessions

Opportunistic Inspections

- The NRC staff clarified that opportunistic inspections are a fail-safe mechanism, but they should be limited so as not to look at the same areas over and over, excessively. An industry member made the comment that opportunistic inspections plus baseline inspections may be excessive at times and brought up the question of whether baseline inspections would be enough. The industry member stated that the AMP is only used for structures, systems, and components (SSCs) with no significant aging issues, but in many cases will require multiple inspections of a single component per year (e.g., during HVAC spring and fall maintenance), which can lead to extended out of service time/high risk windows, and result in higher value work being deferred or canceled. The industry member added that perhaps opportunistic inspections should be dropped and that perhaps meeting the maximum number of inspections would be enough.
- The NRC staff stated it would be open to discussions on replacing opportunistic inspections with a specific number of periodic inspections. The NRC staff was also open to industry recommendation(s), and that citing of plant specific operating experience would be useful in justifications.
- Similar industry comments were made related to inspection parameter guidance relaxation and clarification. The NRC staff stated it was open to discussion and industry recommendations. The industry member said that the topic would be brought back to the working groups.

One Time Inspections

- An industry member stated that positive inspection results indicating age-related degradation is not occurring as documented in Electric Power Research Institute (EPRI) 3002000459 can be leveraged to significantly scale back open technical item (OTI) inspection requirements. The NRC staff agreed to have internal discussions on this topic.

Electrical

- An industry member made a comment related to the elimination of the E6 AMP (Cable Connections not Subject to 50.49) based on little to no age-related operational experience (OE) supporting the continued requirement for sampling into the future. The NRC staff replied that more information is needed as far as program observation, offering reasonable assurance of proper aging management. The NRC staff offered that maybe there is a median ground and room for improvement, and it was open to discussion and industry recommendations.
- An industry member made a comment related to the elimination of the E4 AMP for fuses, that many fuses are not within the scope of license renewal. The NRC staff generally agrees with the statement and noted that it was open to discussion and industry recommendations.

Recurring Internal Corrosion (RIC)

- An industry member recommended considering deletion of this further evaluation (FE). Most plants are likely to meet the RIC criteria in their raw water systems. RIC issues in non-raw water systems are unusual and due to some plant-specific issue that would need to be addressed through the normal operating experience review for the applicable AMP(s).
- The NRC staff stated that non-raw water systems are the exception not the rule, but raw water systems still need to be addressed. The NRC staff stated that in the past, RIC

- issues were addressed as they came up, but that there was concern that the focus was on symptoms rather than the underlying problem. The NRC staff stated that many stations have a raw water plan and that addressing the FE item should be straight forward.

Other

An industry member stated that 10 CFR 54.30(a) limits the scope of the rule to aging management during the PEO. It was then stated that historically, the GALL guidance was similarly limited to recommended aging management during the PEO, other than one-time inspections. The industry member concluded that recent guidance has added pre-PEO aging management requirements to various AMPs. It was recommended that the NRC staff consider this.

Public Comments

None

Enclosure:

1. Meeting Agenda
2. Attendee List

SUBJECT: SUMMARY OF JUNE 7–8, 2022, PUBLIC MEETING TO DISCUSS TECHNICAL TOPICS FOR THE SUBSEQUENT LICENSE RENEWAL GUIDANCE DOCUMENT UPDATES. DATED: OCTOBER 6, 2022

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ADAMS Accession No.: ML22271A348**NRR-106**

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NAME	LGibson	ESayoc	
DATE	10/05/2022	10/06/2022	

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PUBLIC MEETING AGENDA

PUBLIC MEETING TO DISCUSS TECHNICAL TOPICS FOR THE SUBSEQUENT LICENSE RENEWAL GUIDANCE DOCUMENT UPDATES

SEPTEMBER 7, 2022		
TIME (ET)	TOPIC	SPEAKER
0900-0930	Introductions and Public Meeting Admin.	NRC (Jessica Hammock)
0930-1030	Fire Protection	NRC (James Gavula, Leslie Terry)
1030-1045	Break	
1045-1145	Structures Monitoring	NRC (Bryce Lehman)
1145-1245	Lunch	
1245-1345	Fire Water System	NRC (James Gavula, Leslie Terry)
1345-1400	Break	
1400-1515	Reactor Vessel Steel Supports, Loss of Fracture Toughness	NRC (David Dijamco)
1515-1600	Open Topic Discussion, Public Comments & Daily Summary	NRC (Jessica Hammock), Industry, Public
SEPTEMBER 8, 2022		
TIME (ET)	TOPIC	SPEAKER
0900-0915	Introductions and Public Meeting Admin.	NRC (Emmanuel Sayoc)
0915-1015	Buried and Underground Piping and Tanks	NRC (Brian Allik, James Gavula)
1015-1030	Break	
1030-1145	New AMP on High-density polyethylene (HDPE) and carbon fiber reinforced polymer (CFRP) piping systems	NRC (Eric Reichelt)
1145-1245	Lunch	
1245-1345	Open Technical Session	NRC (Emmanuel Sayoc), Industry, Public
1345-1430	Public Comments, Meeting Summary & Close	NRC (Emmanuel Sayoc), Industry, Public

List of Attendees

U. S. Nuclear Regulatory Commission:

Ali Rezai	James Gavula
Allen Hiser	James Medoff
Amy Hull	Jessica Hammock
Andrew Prinaris	John Bozga
Andy Johnson	John Honcharik
Angie Buford	John Wise
Ata Istar	Jorge Cintron-Rivera
Bart Fu	Julie Ezell
Bill Rogers	Karen Sida
Brian Allik	Lauren Gibson
Brian Harris (NRR)	Leslie Terry
Brian Smith	Liliana Ramadan
Bryce Lehman	Lydiana Alvarado
Candace de Messieres	Emmanuel Sayoc
Carol Moyer	Marieliz Johnson
Carolyn Fairbanks	Mark Yoo
Christopher Tyree	Matthew Hiser
Cory Parker	Matthew McConnell
David Dijamco	Matthew Mitchell
David Roth	Michael Benson
David Rudland	Min Seung
Ed Miller	On Yee
Emma Haywood	Robert Davis
Eric Reichelt	Robert Tregoning
George Thomas	Steven Bloom
Gregory Makar	Tony Gardner
	Varoujan Kalikian

U.S. Senate, Environmental and Public Works Committee Staff Member:

Matthew Marzano

Industry and Public:

Dale E Turinetti	AEPS
Bob Kalinowski	AEPS
Casey Muggleston	Constellation
Alexander R Psaros	Constellation
Francis McGuire	Constellation
Joshua Sarrafian	Constellation
Christopher D Wilson	Constellation
Kurt R Lindeman	Constellation
Adam Andriano	Constellation
George J Wrobel	Constellation
Michael J Baker	Constellation
Seth Rios	Constellation
Kelsi L Eiane	Constellation
Daniel P Madden	Dominion

Industry and Public (continued):

Pratt Cherry	Dominion
Mark Pellegrino	Dominion
Craig H Heah	Dominion
Paul Aitken	Dominion
David T Clohecy	Dominion
James F Hester	Dominion
Keith J Miller	Dominion
Richard C Eagan	Dominion
Tom Snow	Dominion
James Annett	Dominion
Brian L Mount	Dominion
Albert H Spear III	Duke Energy
Lori W Hekking	Duke Energy
Latoya Bennett	Enercon
Mitch McFarland	Enercon
Tanton Mattson	Enercon
Jeff Gromatzky	Enercon
Aaron Halstrom	Enercon
Tristen Hunnewell	Enercon
Ted Hilston	Energy Harbor
Herbert Rideout	Entergy
Todd Sherman	Entergy
Chad Jackson	Entergy
Dan Sojka	Entergy
Rob Burg	Engineering Planning and Management
Emma Wong	Electric Power Research Institute (EPRI)
Garry Young	EPRI
Kyle Amberge	EPRI
Nathan Glunt	EPRI
Dylan Cimock	EPRI
Andrew Mantey	EPRI
James Cirilli	EPRI
Wayne Lunceford	EPRI
Daisuke Nio	Japan Atomic Energy Agency
Frank Hope	Jensen Hughes
Rob Jackson	Jensen Hughes
Andrew Dewhurst	Kinectrics
Todd Evans	Luminant
Amit Kalia	Luminant
Brett Titus	Nuclear Energy Institute
Ted Hilston	Perry Nuclear Power Plant
Mark Bensl	Perry Nuclear Power Plant
Jim Melchionna	Public Service Enterprise Group
Brandon Kenneth Marlow	Southern Co
Michael A. Macfarlane	Southern Co

Industry and Public (continued):

Steven Dolley	South Texas Project Electric Generating Station
Rafael Gonzales	Structint
Dan Denis	Structint
Shari Day	Structint
Livia Costa Mello	Structint
Adam Roukema	Structint
Dennis L Lundy	Tennessee Valley Authority (TVA)
Eric Ashley Michael	TVA
Daniel Green	TVA
Dominick Edgar Logalbo	TVA
Peter John Donahue	TVA
Jonathan Delaune	TVA
William J Baker	TVA
John Chris Hunsaker	TVA
Joseph Herbert Bashore	TVA
Paul Anglin	TVA
Paul Gunter	Beyond Nuclear
Matthew Golliet	Westinghouse
Benjamin Mays	Westinghouse
Anees Udyawar	Westinghouse
Gregory Imbrogno	Westinghouse
Alexandria Scott	Westinghouse
Gordon Hall	Westinghouse
Mark Moenssens	Westinghouse
Matthew J Palamara	Westinghouse
Jolynn E Oquist	Xcel Energy
Stephen E Sollom	Xcel Energy

Additional unidentified members of the public and/or industry attended the meeting.