



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

August 19, 2015

MEMORANDUM TO: Anthony H. Hsia, Deputy Director  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

FROM: Kristina L. Banovac, Project Manager  
Renewals and Materials Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

A handwritten signature in blue ink, appearing to read "K. Banovac", with a long horizontal flourish extending to the right.

SUBJECT: SUMMARY OF JULY 29, 2015, PUBLIC MEETING ON PROPOSED  
CHANGES IN DRAFT NUREG-1927, REVISION 1

Background

The U.S. Nuclear Regulatory Commission (NRC) staff held a public meeting on July 29, 2015, to inform stakeholders of the proposed changes in NUREG-1927, Revision 1, "Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel," Draft Report for Comment (ML15180A011).

The meeting was noticed on July 10, 2015 (ML15191A244).

Discussion

Meeting attendees included public citizens and interest groups, the media, industry representatives, and representatives and contractors from national laboratories, the U.S. Department of Energy, and the Nuclear Waste Technical Review Board. The attendees participated in-person or on the teleconference. The meeting attendance list is provided in Enclosure 1.

The meeting discussion followed the meeting agenda, which is provided in Enclosure 2. The NRC staff gave a presentation on the proposed changes in Draft NUREG-1927, Rev. 1, which is included in Enclosure 3.

Following the NRC presentation, NRC staff facilitated the question and answer portion of the meeting. Stakeholders asked questions of the NRC staff about the draft guidance, and the staff clarified the content and intent of certain portions of the draft guidance. The meeting itself was not the vehicle for submission of comments. Rather, the staff encouraged interested stakeholders to submit written comments on draft NUREG-1927, Rev. 1, by August 21, 2015, through the formal process outlined in the July 7, 2015, *Federal Register* notice (80 FR 38780, <http://www.gpo.gov/fdsys/pkg/FR-2015-07-07/pdf/2015-16540.pdf>).

## Public Participation Themes

During the question and answer portion of the meeting, NRC staff addressed questions on the following topics and provided the following clarifications on the draft guidance:

- If the Nuclear Energy Institute (NEI) submits a revision to NEI 14-03, "Guidance for Operations-Based Aging Management for Dry Cask Storage," that addresses the NRC staff's comments on Rev. 0 of that document, the NRC staff will then decide whether to endorse it, and if so, what vehicle will be used for endorsement (e.g., NUREG-1927 or a regulatory guide). The staff does not anticipate that NUREG-1927, Rev. 1 will endorse NEI 14-03, as the draft Rev. 1 for comment did not include proposed endorsement of NEI 14-03.
- The High Burnup Fuel (HBF) Monitoring and Assessment Program is different than the other example aging management programs (AMPs) in Appendix B, as it is more of a monitoring and surveillance program that is using information obtained elsewhere (i.e., in a demonstration program that meets guidance in ISG-24, "The Use of a Demonstration Program as a Surveillance Tool for Confirmation of Integrity for Continued Storage of High Burnup Fuel Beyond 20 Years," ML14058B166). In addition, NRC staff maintains awareness of, and involvement in, development of national consensus codes, standards, and guides, and if such a consensus guide provides applicable aging management guidance, NRC staff would consider including it as a reference in NUREG-1927. The staff also noted that these are example AMPs, and that other approaches can be proposed and justified by applicants.
- The acceptance criteria in the example concrete AMP in Appendix B are based on quantitative criteria in American Concrete Institute (ACI) 349.3R-02. Also, the acceptance criteria for the groundwater chemistry program are also quantitative criteria, consistent with NUREG-1801 ("Generic Aging Lessons Learned (GALL) Report," ML103490041) and American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI, Subsection IWL.
- The guidance would be applicable to any dry storage systems (DSSs) in their period of extended operation at a consolidated interim storage facility (CISF), in terms of the aging management review and determination of any aging management activities needed in the DSS's period of extended operation. However, this guidance document is not the sole guidance intended to be used for the review of a specific license application for a CISF.
- The draft guidance generally discourages the use of surrogate inspections until there is a good base of operating experience regarding independent spent fuel storage installation (ISFSI) and DSS inspections. Inspecting an empty system on the site may not provide representative results, as the conditions of the empty system (heat load, convection, air flow, environmental deposits, among others) would be different than those of a loaded system.
- The draft guidance provides references to consensus codes, standards, and guides and the topics they address, rather than a detailed explanation of each code/standard/guide, as NRC needs to comply with copyrights for those codes/standards/guides.

- The service life of a DSS depends on the materials of construction, the service environment, and the applicable aging mechanisms and effects. The draft guidance addresses aging management, including corrective actions that could include repairs or replacement of certain structures, systems, and components of the DSS, to continue use of the DSS in the period of extended operation. The ISFSIs or DSSs are licensed or certified for a fixed period of time, based on the license and certificate of compliance (CoC) terms in 10 CFR Part 72. To continue operations past the initial storage term, a licensee or certificate holder would need to obtain NRC renewal of the license or the CoC.
- The example concrete AMP in Appendix B is consistent with ACI consensus guides in terms of visual inspections of below-grade concrete, and it discusses the idea of an opportunistic inspection in lieu of periodic focused inspections. The applicant can make a case for the combined use of visual inspections of accessible areas and of a groundwater chemistry program in lieu of focused inspections.
- In the example canister AMP in Appendix B, the inspection capability would need to be in existence by the time this inspection is planned in the AMP. The inspection instrumentation does currently exist, and industry is currently developing a delivery system for getting the instruments in the close confines of the DSS. Volumetric examination methods to determine depth of cracks include ultrasonic testing and eddy current testing. ASME has formed a task group to develop a code case for the examination and inspection guidance for DSSs. The task group includes representatives from NRC and DSS vendors.
- The draft guidance incorporates ISG-24 in Appendix D. However, before the staff retires ISG-24, it will consider whether any aspects of ISG-24 need to be incorporated into the standard review plans for initial storage (NUREG-1536, "Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility," ML101040620; and NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities," ML003686776).
- The draft guidance explains the aging management framework for CoC renewals and implementation by general licensees. The NRC staff welcomes comments in this area, including any difficulties regarding general licensee implementation of CoC AMPs (e.g., if certain details are not included in the CoC AMP, such as opportunistic inspections for below-grade concrete).
- There was much discussion on the concept of a "lead system inspection" in Appendix C, particularly how it would work for CoC renewals, including the difference between: (1) a bounding inspection, the results of which would be included in the CoC renewal application (referred to as a "pre-application inspection" below); and (2) the cask user's baseline inspections, which would be conducted before the user's systems entered the period of extended operation. The NRC staff provided the following clarifications regarding the lead system inspection content in the draft guidance.

A pre-application inspection is not needed at every site using the CoC. The draft guidance notes that the general licensee or cask user would conduct a baseline inspection before its system enters the period of extended operation. The baseline inspection is expected at every general-licensed site.

As the lead system inspection is expected to be conducted before the renewal application is submitted to the NRC, a vehicle for applicants and NRC to discuss the plans for the lead

system inspection (and selection of system(s) to inspect) is a pre-application meeting. The draft guidance does not include a timeframe for how far in advance of the renewal application submittal the pre-application meeting should occur, considering the lead time applicants need to plan the inspection, conduct the inspection, and analyze the results of the inspection for consideration in the renewal application. The staff would appreciate any industry comments on lead time, from an operational perspective.

The draft guidance does not include a specific number of systems or specific number of sites that would need to be inspected to be considered a “bounding” pre-application inspection, as the number depends on the materials, the service environments where the DSSs are and can be used, and the aging mechanisms applicable for the material-environment combination. However, the draft guidance includes the idea of a cask user conducting a baseline inspection at its site to compare to the pre-application inspection results, to ensure the baseline inspection did not reveal any aging effects not identified in the pre-application inspection. The staff also recognized that as we get a more extensive base of operating experience, then we can better define “bounding.”

Also, as more operating experience is gained, and as learning AMPs respond to this operating experience, the AMPs can be adjusted appropriately (e.g., inspection frequencies and sample sizes increased or decreased, as appropriate).

If stakeholders feel that the pre-application inspection for CoC renewals is not needed, the NRC staff would appreciate if such stakeholders could include in their comments recommendations for alternatives that can be used, as the staff considers the pre-application inspection results as an important element of an operations-focused approach to aging management.

The NRC staff told stakeholders that the topic of lead system inspections, particularly how the lead system inspection could work for CoC renewals and the general license framework, is an area where the staff is specifically seeking comment, and the staff welcomes comments submitted on this topic.

### **Action Items/Next Steps**

The NRC staff encouraged submittal of stakeholder comments for NRC's consideration as it finalizes the guidance. NRC staff will consider all comments received by August 21, 2015. NRC staff will meet with the Advisory Committee on Reactor Safeguards in the spring of 2016, to discuss the public comments received and how the staff addressed them, in the proposed final guidance. The staff expects to publish the revised guidance as a final NUREG-1927, Rev. 1, which is expected in the summer of 2016.

#### Enclosures:

1. Meeting Attendees
2. Agenda
3. Handouts
  - NRC Presentation on Changes in Draft NUREG-1927, Rev. 1
  - Handout on How to Submit Comments on Draft NUREG-1927, Rev. 1

## MEETING ATTENDEES

Topic: Meeting on Proposed Changes in Draft NUREG-1927, Revision 1

Date: July 29, 2015, 9:00 a.m. – 12:00 p.m.

Location: One White Flint North Building, Commission Hearing Room

NAME	AFFILIATION
Kristina Banovac	NRC/NMSS/DSFM/RMB
Emma Wong	NRC/NMSS/DSFM/IOB
Sarah Lopas	NRC/NMSS/MSTR/FSTB
Don Shaw	AREVA
Joe Carter	SRNL
Ricardo Torres	NRC/NMSS/DSFM
Terry Pickens	Xcel Energy
John Wise	NRC/DSFM/RMB
Chris Brown	NRC/ACRS
Jim Wood	Exelon
David Pickett	CNWRA
Bill Brach	Consultant
Matt Keene	Duke Energy
Matt Freedman	DOE contractor, Z, Inc.
Michele Sampson	NRC/DSFM
Tae Ahn	NRC/DSFM
Wendy Reed	NRC/DSFM

NAME	AFFILIATION
Kris Cummings	NEI
Bob Tripathi	NRC
Greg Oberson	NRC
Matt Hiser	NRC
Harold Scott	NRC
Banad Jagannath	NRC/NMSS
Brian Gutherman	GTS/NEI
Meraj Rahimi	NRC/NMSS
Maureen Conley	NRC
A.H. Hsia	NRC
William H. Ruland	Steelhead Consulting, LLC
Huda Akhavannik	NRC
Jack Guttman	NRC
Jennifer Davis	NRC
Darrell Dunn	NRC
Al Csontos	NRC
Mark Lombard	NRC
Marlone Davis	NRC
Rod McCullum	NEI
John Greeves	Consultant

NAME	AFFILIATION
Patricia Borchmann	Public
Richard Rothstein	Town of Plymouth, MA Nuclear Matters Committee
Clay Channell	Southern Nuclear
Donna Gilmore	SanOnofreSafety.org
David Martin	Public
John Kessler	J Kessler and Associates, LLC
Paul Plante	3 Yankees
Zita Martin	Tennessee Valley Authority
Randall Granaas	SONGS Fuels
Carlyn Greene	UxC
Mary Lampert	Pilgrim Watch
Robert Capstick	3 Yankees
Yung Liu	ANL
Jim Williams	Dominion
Yi-Ming Pan	CNWRA
Luis Hinojosa	Holtec
Miguel Manrique	AREVA
Adam Levin	AHL Consulting
Robert Einziger	NWTRB
Erica Gray	Public

## MEETING AGENDA

Meeting on Proposed Changes in Draft NUREG-1927, Revision 1

July 29, 2015

9:00 a.m. – 12:00 p.m. (Eastern Daylight Time)

One White Flint North Building, Commission Hearing Room

- 9:00 a.m. Welcome and Meeting Objectives (NRC)
- 9:15 a.m. Presentation on Proposed Changes in Draft NUREG-1927, Revision 1 (NRC)
- 9:45 a.m. Public Questions on Proposed Changes in Draft NUREG-1927, Revision 1 (All)
- 10:40 a.m. Break
- 10:50 a.m. Continuation of Public Questions on Proposed Changes in Draft NUREG-1927, Revision 1 (All)
- 11:50 a.m. Wrap-Up (NRC)
- 12:00 p.m. Adjourn

HANDOUTS

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