



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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April 22, 2015

MEMORANDUM TO: Anthony Hsia, Deputy Director
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: John P. Wise, Materials Engineer **/RA/**
Renewal and Materials Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF MARCH 18, 2015, PUBLIC MEETING WITH THE
NUCLEAR ENERGY INSTITUTE ON THE NRC REVIEW OF NEI 14-03,
"GUIDANCE FOR OPERATIONS-BASED AGING MANAGEMENT FOR
DRY CASK STORAGE"

Background

The U.S. Nuclear Regulatory Commission (NRC) staff held a Category 2 public meeting with the Nuclear Energy Institute, their members, and consultants on March 18, 2015, to discuss the NRC review of NEI 14-03, "Guidance for Operations-Based Aging Management for Dry Cask Storage" (ML14266A224). In previous correspondence, NEI requested that the NRC endorse this guidance in the update of NUREG-1927, "Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance."

The meeting was noticed on February 25, 2015 (ML15063A147). The meeting attendance list is provided in Enclosure 1.

Discussion

The meeting discussion generally followed the meeting agenda, which is included in Enclosure 2. Enclosure 3 contains the presentations given by the NRC and NEI.

The presentations and discussions focused on the comments that the NRC provided to NEI in its letter dated January 21, 2015 (ML15013A201). In that letter, the NRC outlined its general agreement with the framework in NEI 14-03 for an operations-focused approach to aging management for dry cask storage that is continuously informed by operating experience (OE) and confirmatory research. However, other aspects of NEI 14-03 required further discussion before this document could be considered for endorsement in the pending update to NUREG-1927. The public meeting discussion of these aspects is summarized below.

The NRC expressed its support for the operations-focused approach in NEI 14-03 that relies, in part, on the creation of a clearinghouse to share OE across the industry. However, the NRC

noted that NEI 14-03 lacked details on who would own the operating experience clearinghouse, how all sites would gain access, and the processes that would be used to aggregate, assess, and disseminate the OE. NEI responded that it is still in the process of identifying options for creating the OE sharing framework described in NEI 14-03. Some options NEI is considering include enhancing existing cask vendor programs and taking advantage of the OE sharing infrastructure used by power plants.

The NRC also expressed its support for the “tollgate” concept introduced in NEI 14-03, whereby operating experience and results of confirmatory research programs are periodically assessed to determine the effectiveness of aging management programs (AMPs) and the validity of time-limited aging analyses (TLAAs). The NRC requested that NEI 14-03 provide additional guidance on how such effectiveness reviews should be performed, including how to establish performance criteria for the elements of the AMPs. The NRC suggested that the guidance for power plants in NEI 14-12, “Aging Management Program Effectiveness,” could be considered for dry cask storage. NEI stated that it anticipated providing additional guidance on assessing effectiveness once more information from inspection results and the development of inspection technologies became available; however, NEI would consider the NRC’s suggestion to incorporate additional detail in an earlier timeframe.

The NRC and NEI discussed their differing views on the appropriate degree of NRC control of changes to aging management activities. NEI emphasized that the degree of control of AMPs should be consistent with that for power plants. In this case, only high-level AMP information would be included in the license or certificate of compliance (CoC) and only summary descriptions of AMPs would be included in safety analysis reports. NEI stated that this approach provides for needed flexibility for licensees and CoC holders to respond to OE and modify AMPs in a timely manner without having to obtain NRC approval. The NRC stated that, at this time, certain aspects of AMPs will likely continue to be included as conditions of licenses and CoCs in order for the staff to find reasonable assurance that the effects of aging will be adequately managed. The NRC cited uncertainties in the active aging mechanisms due to the limited availability of dry cask inspection data and the lack of required inspections in current operations as part of its basis for maintaining a greater NRC role in decisions that could weaken aging management activities.

The NRC provided an overview of its lead system inspection guidance in the current draft update to NUREG-1927 (ML15068A303). Lead system inspections are performed prior to the submittal of a renewal application in order to confirm that components have not undergone unanticipated degradation. The NRC clarified that specific licensees should not rely on the use of surrogates (inspections at other sites) for their lead system inspections. For CoC holders with systems at multiple sites, the NRC considers it acceptable to perform a lead system inspection at a subset of those sites, provided that the chosen systems are bounding with respect to the susceptibility to the applicable aging effects and baseline inspections are performed at the remaining sites prior to entering extended operation. NEI responded with its concern that a CoC holder has no legal authority to require a general licensee to perform a lead system inspection. The NRC recognized this limitation, but suggested that general licensees may have an interest in supporting the CoC application. NEI also stated that the NRC guidance needs to better distinguish between lead system inspections and inspections associated with aging management programs.

Finally, the NRC and NEI discussed portions of NEI 14-03 that the NRC felt could benefit from more detail in the guidance and some clarifying language. This included a request by the NRC for a greater level of detail in the guidance for the application format and content as well as

suggestions to clarify discussions of AMPs and TLAAs. NEI stated that it understood the NRC's comments and intends to update its guidance. In doing so, NEI will be reviewing NEI 14-03 with respect to recent applications and NEI 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule."

Following the presentations by the NRC and NEI, members of the public were given the opportunity to make comments or ask questions.

One public member urged licensees and CoC holders to build the capability to perform aging management activities into the designs of dry cask storage systems, given the difficulty of accessing and inspecting the metallic storage canisters currently in use. The public member also expressed a concern that the Electric Power Research Institute (EPRI) model that predicts stress corrosion crack growth rates in stainless steel storage canisters does not take into account all applicable data and thus may underestimate crack growth rates. NRC staff acknowledged the need to judiciously include available data to provide conservative estimates of crack growth rates. Finally, the public member asked about the timing of the public comment period for NUREG-1927, "Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel," Revision 1. NRC staff responded that NUREG-1927 should be out for public comment in May 2015, provided that no significant revisions are made following the staff's April 8, 2015, meeting with the Advisory Committee for Reactor Safeguards (ACRS).

Another public member commented that the NRC guidance to examine a single lead system prior to the submittal of a renewal application, and a single system during the renewal period, is not nearly adequate to capture the condition of the many canisters at a given site. The public member noted that this is a particular concern in areas with the potential for accelerated stress corrosion cracking. NRC staff responded that the adequacy of the recommended sample size is supported by the selection of the system(s) that are most susceptible to each of the aging effects. NRC staff also noted that, should unanticipated degradation be discovered, the licensee's corrective action program would be expected to trigger an expanded inspection sample to additional systems. The staff and NEI members further noted that any such operating experience would be shared across the industry (such as through the NRC generic communication process or via vendor users groups) to insure that other sites are aware of and can respond appropriately to the findings.

Finally, a member of the industry asked the NRC whether a single renewed CoC would be granted that covers all amendments under a given CoC, or whether separate stand-alone CoCs will be granted for each individual amendment. The NRC responded that it is still evaluating that issue, although it was considered likely that the amendments would remain in separate stand-alone CoCs.

TAC No.: LA0233

Enclosures:

1. Meeting Attendees
2. Agenda
3. Presentation Handouts

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MEETING ATTENDEES

Agenda

Public Meeting with Nuclear Energy Institute on NEI 14-03, Operations-Based Aging Management for Dry Cask Storage

March 18, 2015

9:00 A.M. – 11:45 A.M.

Three White Flint North, Room 13A28

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|-------------------------|----------------------------------------------------------------------------------------------------------------|
| 9:00 A.M. – 9:15 A.M. | Welcome and Introductions (NRC, NEI, All) |
| 9:15 A.M. – 10:00 A.M. | NRC presentation: Comments on NEI 14-03 with perspectives from Draft NUREG-1927, Revision 1 (NRC) |
| 10:00 A.M. – 10:45 A.M. | NEI presentation: Response to NRC review of NEI 14-03 and initial observations on NUREG-1927, Revision 1 (NEI) |
| 10:45 A.M. – 11:15 A.M. | Open Discussion (All) |
| 11:15 A.M. – 11:45 A.M. | Public Comments and Wrap Up |

PRESENTATION HANDOUTS