



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

October 17, 2016

MEMORANDUM TO: Steven D. Bloom, Chief  
Subsequent Renewal, Guidance,  
and Operations Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

FROM: Evelyn H. Gettys, Project Manager/**RA**/  
Subsequent Renewal, Guidance,  
and Operations Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE QUARTERLY MEETING BETWEEN THE  
U.S. NUCLEAR REGULATORY COMMISSION STAFF AND  
THE NUCLEAR ENERGY INSTITUTE TO DISCUSS CURRENT  
LICENSE AND SUBSEQUENT LICENSE RENEWAL TOPICS

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of the Nuclear Energy Institute (NEI) met on September 15, 2016, to discuss various topics on license renewal and subsequent license renewal. The meeting summary package is available in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession No. ML16267A068.

Enclosures:  
1. Meeting Summary  
2. Participation List

cc: Reactor License Renewal Stakeholder: GovDelivery

CONTACT: Evelyn Gettys, NRR/DLR  
301-415-4029

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**ADAMS ACCESSION Nos:** ML16266A520 (package); ML16266A520 (Summary);  
ML16260A130 (Slides & Agenda) \*Concurred via email

<b>OFFICE</b>	LA:RPB1:DLR*	PM:RSRG:DLR	BC:RSRG:DLR
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<b>DATE</b>	10/ 04 /2016	10/ 7 /2016	10/ 17 /2016

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## **Meeting Summary for the September 15, 2016, between U.S. Nuclear Regulatory Commission and Nuclear Energy Institute**

### 1. Brief Status of Action Items

The staff presented action items from the July 28, 2016 meeting, giving a brief description of the action item status. For the complete list see slides ML16260A130.

### 2. Status of Interim Staff Guidance LR-ISG-2016-01

The staff presented on the status of interim staff guidance (ISG), LR-ISG-2016-01, "Changes to Aging Management Guidance for Various Steam Generator Components." This draft ISG discusses visual inspections for steam generator tubes. The staff expects the final ISG to be issued by the end of this year.

### 3. AMP XI.M31, Reactor Vessel Material Surveillance

The staff discussed the disposition of comments on the subsequent license renewal (SLR) guidance documents. The draft Generic Aging Lessons Learned (GALL)-SLR aging management program (AMP) XI.M31, "Reactor Vessel Material Surveillance," stated that the surveillance capsule to address SLR operating conditions should have a fluence that is referenced to the "peak vessel neutron fluence at the end of the subsequent period of extended operation." A comment on this AMP stated that the fluence from boiling-water reactors (BWRs) should be based on the 1/4T fluence, not the peak reactor pressure vessel (RPV) wall fluence. The staff described that the peak RPV neutron fluence is needed for two time-limited aging analyses (TLAAs) related to BWRs, as described in Sections 4.2.3.1.5 and 4.2.3.1.6 of NUREG-1800, Rev. 2, "Generic Aging Lessons Learned for License Renewal (GALL) Report. The staff stated that this would be clarified to indicate that the SLR surveillance capsule fluence should be referenced to the fluence of interest for the RPV materials that are contained in the surveillance capsule.

The staff addressed another comment on AMP XI.M31, and noted that "many plants will need to build reconstituted capsules for SLR to conform to GALL-SLR." The staff recommended that heat-affected zone (HAZ) specimens should not be required in the reconstituted capsules. The staff noted that discussions are continuing with the Office of General Counsel to determine if the exclusion of HAZ specimens is possible within the guidance of the GALL-SLR absent a change in Appendix H to 10 CFR Part 50, or if plants would need to request an exemption from Appendix H.

Action item: The NRC staff to clarify terms used in AMP XI.M31 to describe capsules that are to be used for testing.

### 5. AMP X.M1, Fatigue Monitoring, and SRP 4.3, Metal Fatigue

Action Item from the July 28, 2016 meeting.

The staff commented that regarding draft GALL-SLR AMP X.M1, "Fatigue Monitoring," and provisions of draft SRP-SLR Section 4.3, "Metal Fatigue," the staff described planned changes to address the use of NRC-approved reports for the evaluation of TLAAAs related

to environmental effects on fatigue, cumulative usage factor ( $CUF_{en}$ ). The staff stated that it is considering changes to the cited sections which would indicate that environmental effects on fatigue may be evaluated using the guidance in Regulatory Guide (RG) 1.207, Rev. 1, "Guidelines for Evaluating Fatigue Analyses Incorporating the Life Reduction of Metal Components Due to the Effects of the Light-Water Reactor Environment for New Reactors," NUREG/CR-6909, Rev. 0, "Effect of LWR Coolant Environments on the Fatigue Life of Reactor Materials" (with "average temperature" used consistent with the clarification that was added to NUREG/CR-6909, Rev. 1); or other subsequent NRC-endorsed alternatives. For  $CUF_{en}$  calculations that are evaluated in accordance with 10 CFR 54.21(1)(i), the staff is considering changes which would indicate that a plant-specific justification can be provided to demonstrate that the guidance in Section 4.3.1.2.3 of NUREG-1800, Rev. 2 is applicable to the existing  $CUF_{en}$  calculations and provides conservative values for  $CUF_{en}$ . Because  $CUF_{en}$  TLAAs evaluated in accordance with 10 CFR 54.21(1)(ii) or 10 CFR 54.21(1)(iii) would, by definition, involve re-calculation of the  $CUF_{en}$  values, the staff believes it is reasonable for applicants to utilize the guidance in RG 1.207, Rev. 1; NUREG/CR-6909, Rev. 0 (with "average temperature" used consistent with the clarification that was added to NUREG/CR-6909, Rev. 1); or other subsequent NRC-endorsed alternatives.

Staff Recommendation: No additional actions needed. This action item is closed.

6. AMP XI.M12, Thermal Aging Embrittlement of Cast Austenitic Stainless Steel

Action Item from the July 28, 2016 meeting.

The staff agreed to review Westinghouse Topical Report WCAP-13045 and WCAP-15555 and consider whether modifications are needed to AMP XI.M12, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel," for Westinghouse pump casings. The staff reviewed WCAP-13045, "Compliance to ASME Code Case N-481 of the Primary Loop Pump Casings of Westinghouse Type Nuclear Steam Supply Systems," dated September 1991, and several plant specific WCAPs, and determined that the industry had not provided a sufficient basis for exempting pump casings from the recommendations of AMP XI.M12. The staff noted that WCAP-15555 was never submitted to the NRC and was not available to review. The main issues are that 1) information provided doesn't demonstrate the previous flaw evaluations of pump casings would remain valid out to 80 years; and 2) information provided does not cover Combustion Engineering or Babcock & Wilson plants. However, the NRC did propose to modify AMP XI.M12 to allow, for pump casings, as an alternative to the screening and other actions (recommended by AMP XI.M12). No further actions are needed if applicants demonstrate that the original flaw tolerance evaluation, performed as part of Code Case N-481 implementation, remains bounding and applicable for the SLR period, or this evaluation is revised to be applicable to 80 years.

Staff Recommendation: No additional actions needed. This action item is closed.

7. AMP XI.S1, ASME Section XI, Subsection IWE

The staff discussed the visual examination requirements for “signs of distress” or “surface irregularities” as stated in IWE-2310. These “signs of distress” or “surface irregularities,” include liner bulges.

Staff Recommendation: The staff to finalize the GALL-SLR guidance to reflect what existing guidance is stating. This action item is closed.

8. International-IGALL

The staff briefly presented on the efforts and role the NRC has in the international renewal process. The staff also indicated that more information can be found by the following two methods:

To access information for the International Atomic Energy Agency (IAEA) International Generic Ageing Lessons Learned (IGALL) program, either use this link:

<https://gnssn.iaea.org/NSNI/PoS/IGALL/SitePages/Home.aspx?RootFolder=%2FNSNI%2FPoS%2FIGALL%2FShared%20Documents%2FIGALL%20folder%2FDOWNLOAD&FolderCTID=0x012000BAE2AD2BC1B0FE4CAE10CF0A113FB57F&View=%7B6478452E-E17F-4DE9-B095-3182CFB5BC2B%7D>

or:

1. Google “IAEA IGALL”
2. Select item with address beginning with “https://gnss.iaea.org/NSNI . . . “
3. At bottom of page, select folder “IGALL folder”
4. Select folder “DOWNLOAD”.

In either case, one can now access links to the IGALL report (SRS 82), the Definitions file, and ZIP files with the aging management review table, AMPs and TLAA descriptions.

9. Question from the Public

There was one comment from the public on the need to be diligent on issues of aging and natural hazards.

10. Action Items for Next Meeting

There are no carry over action items to the next meeting. The new action items are as follows:

- 1) The NRC staff to clarify terms used in AMP XI.M31 to describe capsules that are to be used for testing.

2) The NRC staff to verify if the Draft Regulatory Guide-1331, "Service Level I, II, and In-Scope License Renewal Protective Coatings Applied to Nuclear Power Plants," has any issues that will affect plants that are currently in the LR process, or plants that intend to submit applications for LR or SLR.

Response:

The staff has confirmed that the document does not contain license renewal information that is inconsistent with LR or SLR guidance.

3) NEI will look into obtaining the slides from the April field trip to Westinghouse.

**Meeting between the U.S. Nuclear Regulatory Commission Staff and the Nuclear  
Energy Institute to Discuss Current License and Subsequent Renewal Topics  
September 15, 2016**

**Participants List**

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