



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

February 20, 2018

MEMORANDUM TO: Eric R. Oesterle, Chief
License Renewal Projects Branch
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

FROM: Bennett Brady, Senior Project Manager */RA/*
License Renewal Projects Branch
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF JANUARY 18, 2018, PRE-APPLICATION
MEETING WITH EXELON CORPORATION REGARDING
THE PEACH BOTTOM, UNITS 2 AND 3, SUBSEQUENT
LICENSE RENEWAL APPLICATION

On January 18, 2017, the U.S. Nuclear Regulatory Commission (NRC) held a Category 1 public meeting at NRC headquarters with the Exelon Corporation. This was a pre-application meeting to discuss the subsequent license renewal application (SLRA) for Peach Bottom Station, Units 2 and 3, which Exelon plans to submit in July 2018. A previous public meeting was held on September 19, 2017, to discuss the environmental report that will be submitted as part of the SLRA. This meeting was focused on the safety review of the application. The meeting notice and presentation slides presented by Exelon are available in the Agencywide Documents Access and Management System (ADAMS) at Accession Nos. ML18017A881 and ML18017A117, respectively. A list of meeting attendees is enclosed.

Prior to the meeting, the NRC provided Exelon a list of potential discussion topics based on lesson learned from previous applications for first license renewal and areas for subsequent license renewal (SLR) that may require the development of plant-specific programs. This list of discussion topics is included in the public meeting notice (ML18017A881). Exelon also added topics to the meeting discussion topics as noted in their presentation:

- Gap analysis for reactor internals: The Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants (SRP-SLR) Section 3.1.2.2.12 for BWR Internals

Contact: Bennett Brady NRR/DMLR/MRPB
301-415-1905

- Bases for projecting neutron fluence values for the reactor pressure vessel (RPV) and reactor vessel internals to the end of a proposed subsequent period of extended operation
- Changes in methods of analysis since first license renewal, as necessary, for:
 - RPV fluence methodology - consistent with the current licensing basis (CLB)
 - Environmental qualification of electrical equipment - consistent with CLB
 - Fatigue analysis - consistent with CLB
 - Environmentally assisted fatigue (EAF) analysis - consistent with the Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report
- EAF screening methodology for limiting Class 1 locations
- Changes in Technical Specifications anticipated for SLR
- Whether Noble Metal Chemical Addition or Hydrogen Water Chemistry is credited in reducing ISI requirements
- Use of BWRVIP-62 Rev. 1 for BWR Vessel and Internals
- Concrete degradation including irradiation effects
- Cable and electrical aging management programs (AMPs)
- BWRVIP Integrated Surveillance Program (ISP)
 - BWRVIP-135
 - BWRVIP-86 Rev.1-A
- Use of the BWRVIP-74 App. B generic equivalent margins analysis methodology for Upper Shelf Energy (USE) TLAA (time limited aging analysis)
- Potentially new aging effects identified for SLR
- Westinghouse steam dryer aging management
- Use of SLRA Appendix C
- Relationship between license renewal and subsequent license renewal Final Safety Analysis Report supplements

The following discussion occurred during the meeting:

- NRC appreciated that Exelon is working in conjunction with EPRI to determine which EPRI BWRVIP documents need to be updated. During the subsequent period of extended operation, increases in fluence levels need to be assessed for supplemental inspections of BWR vessel internals to manage intergranular stress corrosion cracking.
- The NRC will hold discussions with EPRI on updating their generic publications to cover 80 years of operation while Exelon continues to develop plant-specific approaches.
- Exelon said that it is implementing On-line Noble Chemical Addition (OLNC) at Peach Bottom Units 2 and 3. However, they are not taking credit with respect to reducing the inspection frequency nor any reduction in inspection population of the welds that are susceptible to aging degradation.
- Exelon stated that they would be extending their neutron fluence evaluations to areas above and below the traditional beltline region of the reactor pressure vessel. NRC noted that there is considerable uncertainty in the water density above and below the beltline region which can affect evaluations of these areas.

- The NRC recommended that applicants have an AMP for high-voltage insulators or provide a strong technical basis to justify other inspections, maintenance activities, and programs. The recommendation for high-voltage insulators was revised from a plant-specific further evaluation in the SRP-LR for first license renewal to a recommended AMP for SLR in the GALL-SLR because of operating experience pointing to corrosion and degradation of metallic parts of the insulators as well as the potential high consequences of a loss of function of the high-voltage insulators in the scope of license renewal.
- The GALL-SLR recommends that manholes in the scope of license renewal be visually inspected annually (consistent with NRC Inspection Manual 71111.06, "Flood Protection Measures") in order to ensure that cable splices and cable support structures are intact or the applicant should provide a justification for a less frequent schedule. These inspections are performed in conjunction with periodic inspections for water accumulation and inspections after event-driven occurrences during the subsequent period of extended operation.
- There are numerous ongoing research activities to develop a better understanding of cable aging as well as studies of cable condition monitoring methods for long-term operations. The NRC urged the applicant to maintain an ongoing review of research and development as mentioned in element 10 of the AMPs in the GALL-SLR and Appendix A-4 of the SRP-SLR and to implement the latest techniques that are proving effective.
- Peach Bottom Units 2 and 3 will use their own plant-specific surveillance capsules for calculating the fluence for the RPV.
- For management of the aging effects on the Westinghouse-designed replacement steam dryers, Exelon proposed that an exception to BWRVIP-139 would be necessary since it only applies to GE-designed steam dryers. In addition, Exelon proposed taking credit for a long-term steam dryer inspection program that it is required to develop in accordance with a license condition following inspections of the steam dryers during the first two refueling outages following implementation of the NRC-approved Extended Power Uprate license amendment. NRC staff noted that the timing for development of the steam dryer inspection program was not consistent with the Part 54 requirements for submittal of information with the SLRA that demonstrates how the applicant will manage aging effects for these components.

After Exelon's presentation and discussions, the NRC staff asked for comments or questions from the public. There were no public comments or questions.

There were two action items that resulted from the meeting; one for Exelon and one for the NRC staff. The Exelon staff would reconsider its proposal for managing the aging effects of the new Westinghouse replacement steam dryers such that the intended function(s) will be maintained consistent with the CLB for the subsequent period of extended operation. The NRC staff would further consider Exelon's proposed approach with respect to compliance with Part 54 requirements and potential impact on acceptance of the SLRA.

Subsequent to the public meeting, the NRC staff met internally to address their action item. The NRC determined the following:

- Approach to aging management for replacement steam dryers should be plant-specific due to the unique Westinghouse-designed “Nordic” steam dryers installed at Peach Bottom.
- Sufficient discussion and detail regarding the aging management of the replacement steam dryers will be necessary for the staff to review the SLRA:
 - Per 10 CFR 54.21(a)(3) - “demonstrate that the effects of aging will be adequately managed” so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation
 - NRC staff finding of reasonable assurance that the effects of aging will be adequately managed such that the intended functions of the replacement steam dryers are maintained consistent with the CLB during the subsequent period of extended operation must be based on sufficiently detailed information in the SLRA
- Applicant must demonstrate that the effects of aging for the replacement steam dryers will be adequately managed per 10 CFR 54.21(a)(3):
 - Identify applicable aging effects to the replacement steam dryers in accordance with SRP-SLR Section A.1.2.1, “Applicable Aging Effects”
 - If an aging effect is not applicable – justification should be provided in the SLRA
 - If necessary, develop plant-specific AMP in accordance with SRP-SLR Section A.1.2.2, “Aging Management Program for Subsequent License Renewal,” to manage applicable aging effects
 - Address the ten program elements of an AMP

Docket Nos. 50-277 and 50-278

Enclosure:

Attendee list

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PUBLIC MEETING ATTENDEES

Peach Bottom, Units 2 and 3, Subsequent License Renewal Safety Review

Pre-application Meeting

January 2017, 1:30 to 4:30 P. M.

NRC Three White Flint North, 1C03 and 1C05

5551-5627 Marinelli Rd, North Bethesda, MD 20852

Participant List:

Name	Affiliation
Eric Oesterle	Nuclear Regulatory Commission (NRC)
Bennett Brady	NRC
Albert Wong	NRC
Allen Hiser	NRC
Angela Buford	NRC
John Tsao	NRC
Ganesh Cheruvenki	NRC
Andrew Prinaris	NRC
Seung Min	NRC
William Holston	NRC
Alex Chereskin	NRC
On Yee	NRC
George Thomas	NRC
Roger Kalikian	NRC
Bill Rogers	NRC
Steve Bloom	NRC
Duc Nguyen	NRC
Chris Hovenec	NRC
Steve Ruffin	NRC
Sheila Ray	NRC
Dave Rudland	NRC
Jeffery Mitchel	NRC
Bryce Lehman	NRC
Jerud Hanson	Nuclear Energy Institute
Detor Tamburro	Exelon
Michael J Gallagher	Exelon
John Hilditch	Exelon
John Hufnagel	Exelon
Albert Piha	Exelon
Gary Becknell	Exelon
Don Warfel	Exelon

Enclosure

Name	Affiliation
Jim Gavula (via teleconference)	NRC
Mo Sodallah (via teleconference)	NRC
Bill Rautzen (via teleconference)	NRC
Austin Young (via teleconference)	NRC
Phyllis Clark (via teleconference)	NRC
David Jijamco (via teleconference)	NRC
Jennifer Tobin (via teleconference)	NRC
Jim Annett (via teleconference)	Exelon
Scott Kauffman (via teleconference)	Exelon
Mike Baker (via teleconference)	Exelon
Alex Psaros (via teleconference)	Exelon
Joy Williams (via teleconference)	Sequoyah Nuclear Plant
Roulette Nader (via teleconference)	Duke Energy
Keith Evon (via teleconference)	Structural Integrity Associates, Inc.
Chris Browne (via teleconference)	Alliance Nuclear