2022-014_____BWR Vessel & Internals Project (BWRVIP)

(via e-mail)

March 29, 2022

Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: Lois James

Subject: Docket No. 99902016 - BWRVIP-321-A Irradiation Schedule Change Request

References:

1) Email from Joseph J. Holonich (NRC) to Wynter McGruder (EPRI) "BWRVIP-321 Final Safety Evaluation" dated November 20, 2020 (BWRVIP Letter 2020-098A, NRC ADAMS Accession No. ML20300A309)

2) Letter from Tim Hanley (BWRVIP Chairman) to Joseph Holonich (NRC), "BWRVIP Docket No. 99902016 – Submittal of BWRVIP-321NP-A," dated May 25, 2021 (BWRVIP Letter 2021-046, NRC ADAMS Accession No. ML21152A085)

3) Letter from Tim Hanley (BWRVIP Chairman) to Joseph Holonich (NRC), "Request Withholding of BWRVIP-321-A: BWR Vessel and Internals Project, Plan for Extension of the BWR Integrated Surveillance Program (ISP) through the Second License Renewal (SLR), EPRI Technical Report 3002020504" dated May 13, 2021 (BWRVIP Letter 2021-044, NRC ADAMS Accession No. ML21152A084)

4) Email from Joseph J. Holonich (NRC) to Wynter McGruder (EPRI) "BWRVIP-321-A Verification and Withholding Determination" dated July 1, 2021 (BWRVIP Letter 2021-052A, NRC ADAMS Accession No. ML21174A138/ML21174A139/ML21174A140)

5) Meeting between the NRC staff and EPRI, "Partially Closed Meeting w/EPRI to Discuss the BWRVIP-321 Report Schedule for the Integrated Surveillance Program," dated February 3, 2022 (NRC ADAMS Accession No. ML22033A523)

G004
NRR

The NRC email referenced above (Reference 1) transmitted the final safety evaluation (SE) for BWRVIP-321: Plan for Extension of the BWR Integrated Surveillance Program (ISP) Through the Second License Renewal (SLR) which found the technical report (TR) acceptable for referencing in licensing applications for nuclear power plants to the extent specified and under the limitations delineated in the TR and the SE. BWRVIP-321-A (Reference 2 and 3) was published with the final SE and accepted by the NRC (Reference 4).

BWRVIP-321-A documents the plan for meeting ISP requirements through 80 years of operation (SLR) for the US BWR fleet. The plan calls for installation of a single SSLR capsule holder in a host plant to obtain needed catch-up fluence to support 80 years of operation for the U.S. fleet. The single SSLR capsule holder contains three capsules which correspond to 3 groups (Groups 1, 2, and 3) that are defined in BWRVIP-321-A. BWRVIP-321-A proposed several potential irradiation schedules depending on the flux that could be attained in the host plant. These irradiation schedules ranged from 2-10 years depending on the group and flux that could be attained. BWRVIP-321-A indicates that the NRC will be informed of which irradiation schedules would be followed prior to capsule insertion in accordance with the requirements of 10 CFR 50 Appendix H.

The flux analysis for the host plant indicates that 12 years of irradiation will be required to obtain the necessary fluence for the Group 3 capsule. Accordingly, irradiation schedules approved by the NRC in BWRVIP-321-A are no longer suitable for the ISP for SLR. The BWRVIP informed the NRC of this during a public meeting held on February 3, 2022 (Reference 5).

The BWRVIP has prepared this submittal to request review and approval of an alternative irradiation schedule as described in Attachment 1. An expedited NRC review of this alternative irradiation schedule is requested to support timely installation of the SSLR capsule in the host plant. The alternative irradiation schedule proposes that all three (3) capsules/groups will be irradiated for 12 years. The target installation of the SSLR capsule in the host plant is during the fall 2023 outage. The SSLR capsule, including all three groups, would be removed in 2035. Approval of the alternative irradiation schedule is necessary prior to the planned installation date to limit significant delays associated with finalizing critical design inputs for the SSLR capsule and the development of installation and withdrawal tooling. Significant delays in installation of the SSLR capsule may result in substantial cost increases and further delays in implementation of the ISP for SLR.

The alternative irradiation schedule change is a small change and the review of the change, and the underlying technical basis is narrow in scope. The conclusions of the final SE for BWRVIP-321 will remain unchanged by the approval of the alternative irradiation schedule. The BWRVIP has identified no technical or safety issues associated with irradiating all three groups for 12 years. Twelve years of fluence accumulation of all three groups would result in additional fluence (relative to plant unique target fluence levels) for groups 1 and 2. However, the higher total

accumulated fluence levels are consistent with those that must be attained by similar materials in other BWR vessels and are well below PWR fluence levels for 80 years of life.

Attachment 1 contains Appendix F: Alternate SSLR Surveillance Capsule Withdrawal Schedule. Appendix F describes the alternate withdrawal schedule for the SSLR capsule and the underlying technical basis for the change. Attachment 1 also contains a markup of the necessary changes to the Section 1 and Section 8 of BWRVIP-321-A to reference Appendix F. The additional text and changes to Section 1 and Section 8 are indicated in red text and revision bars in the margins. Attachment 1 is provided for review and approval of the enclosed alternative irradiation schedule.

Upon approval of the alternative irradiation schedule, BWRVIP-321-A will be revised to incorporate Appendix F, the necessary changes to the introduction and Section 8, and the supplemental SE approving the contents of Attachment 1. The original SE will be maintained in the revision in addition to the supplemental SE for the appendix and necessary changes. The revision to BWRVIP-321-A to incorporate these changes will be published as BWRVIP-321, Revision 1-A and submitted to the NRC for acceptance review.

Please note that Attachment 1 contains proprietary information. A letter requesting that the report be withheld from public disclosure, an affidavit describing the basis for withholding this information, and a non-proprietary copy of Attachment 1 are provided as Attachment 2. All proprietary information is highlighted with yellow shading. The pages with the proprietary information are also marked with the letters "TS" indicating that information is considered trade secrets in accordance with 10 CFR 2.390.

If you have any questions regarding this subject, please contact Wynter McGruder at EPRI by telephone at 704.957.9235 or by e-mail at wmcgruder@epri.com.

Sincerely,

Tim Hanley, Constellation, BWRVIP Chairman
Nathan Palm, EPRI, BWRVIP Program Manager

c: BWRVIP Technical Chairs
BWRVIP EPRI Task Managers