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2019-069 BWR Vessel & Internals Project (BWRVIP)

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

Attention: John Klos

BWRVIP Docket No. 99902016

Subject: Request for Permission to Dispose of Reconstituted Surveillance Specimens from the Columbia Generating Station Reactor Vessel

References:

1. D.W. Gregoire to U.S. NRC Document Control Desk, "Columbia Generating Station, Docket No. 50-397, Reactor Vessel Surveillance Capsule," August 28, 2017
2. *BWRVIP-86, Revision 1-A: BWR Vessel and Internals Project, Updated BWR Integrated Surveillance Program (ISP) Implementation Plan.* EPRI, Palo Alto, CA: 2012. 1025144.
3. "Proprietary Safety Evaluation of the "BWRVIP Vessel and Internals Project, Integrated Surveillance Program (ISP) Implementation for License Renewal (BWRVIP-116)," EPRI Report TR-1007824, July 2003," February 24, 2006.
4. GE-NE-B1301809-01, "Washington Public Power Supply System, WNP-2 RPV Surveillance Materials, Testing and Analysis," March 1997.
5. *BWRVIP-321: Boiling Water Reactor Vessel and Internals Project: Plan for Extension of the BWR Integrated Surveillance Program (ISP) Through the Second License Renewal (SLR).* EPRI, Palo Alto, CA: 2018. 3002013097.

During Columbia Generating Station's (Columbia) May 2017 refueling outage, the reactor vessel surveillance capsule specimen holder located at the 300° azimuth (300° surveillance capsule) was found to have failed at the specimen rod to basket interface. The specimen basket was found on the reactor pressure vessel (RPV) shroud support plate and the connecting rod was still hanging in place on the reactor pressure vessel RPV wall. The specimen capsules themselves remained in the basket and intact (Reference 1). It was not possible to repair or return the 300° surveillance capsule to the RPV in its degraded condition. The specimen basket and its contents currently reside in the Columbia spent fuel pool. Although Columbia has no current plans to dispose of the basket and/or specimens, the BWRVIP requests NRC permission to dispose of the specimens in the event that a need should arise for Columbia to dispose of them in the future.

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Background

Columbia utilizes the NRC approved BWRVIP Integrated Surveillance Program (ISP) (Reference 2) as a means for complying with the requirements of 10 CFR 50 Appendix H. However, Columbia is not a host plant under the ISP and there are no current or future plans under the ISP to withdraw or test any surveillance capsules from the Columbia RPV. It is however recognized that under the ISP, capsules not scheduled for testing must be maintained as contingencies in the event that capsules from a host plant become unavailable for testing. This element of the ISP directly addresses an Appendix H requirement for integrated surveillance programs to have a contingency plan. As a result, the Safety Evaluation Report for BWRVIP-116 (Reference 3) identified the following requirements on Page 15:

- All surveillance material with unirradiated CVN baseline data, which includes tested/broken CVN specimens and partially and/or untested surveillance capsule material, must be kept in a condition to allow for possible future testing.
- If these surveillance materials are removed from the RPV, without the intent to test them, these capsules must be stored in a manner which maintains them in a condition which would support possible re-insertion into an RPV, if necessary under the contingency plan.
- Prior to any changes to the storage of these materials, the BWRVIP must be notified to determine whether these changes are acceptable. The BWRVIP must obtain NRC approval for any changes that would prevent the possible testing of these surveillance materials under the contingency plan.

The surveillance materials contained in the Columbia 300° surveillance capsule include plate heat B5301-1 and weld heat 3P4966. Unirradiated data is available for each of these materials. Therefore, NRC approval to dispose of the materials is required per the third requirement stated above.

Evaluation

The surveillance capsule installed at the 300° azimuth in Columbia was a reconstituted capsule. The original surveillance capsule at the 300° azimuth was withdrawn in 1996. These specimens were tested (Reference 4) and voluntarily reconstituted (i.e., not required by 10 CFR 50 Appendix H) and a new capsule containing the reconstituted specimens was installed in the 300° azimuthal position in 1997. These activities occurred prior to the development of the BWRVIP ISP. Two surveillance capsules that were installed prior to plant startup still reside in the Columbia RPV. Inspections of these two surveillance capsules were performed in the May 2017 refueling outage and no signs of wear, degradation, or movement were identified. If the need were to arise to use either the B5301-1 plate heat or 3P4966 weld heat as a contingency material in the ISP, the two remaining capsules are available for testing. When combined with the data from the original 300° capsule, a total of three datasets at unique fluence exposures could be made available. This would provide one more dataset than would be required by Regulatory Guide 1.99, Position 2.1 to develop a chemistry factor based on surveillance data. It is also important to note that there are no plans

to use the B5301-1 plate heat or 3P4966 weld heat in the extension to the ISP that has been proposed in BWRVIP-321 (Reference 5). For these reasons, the BWRVIP has concluded that there is no adverse impact to the ISP from the disposal of the reconstituted specimens from the Columbia 300° surveillance capsule and requests NRC permission for their disposal.

If you have any questions on this subject please contact the BWRVIP ISP project manager, Nathan Palm, by telephone at 724.288.4043 or by e-mail at npalm@epri.com.

Sincerely,

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