April 18, 2011

Mr. David Czufin, Chairman
Exelon Generation
Chairman, BWR Vessel and Internals Project
Electric Power Research Institute
3420 Hillview Avenue
Palo Alto, CA 94304-1395

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION APPROVAL LETTER FOR BWRVIP-117-A, "RAMA FLUENCE METHODOLOGY FOR PLANT APPLICATION – SUSQUEHANNA UNIT 2 SURVEILLANCE CAPSULE FLUENCE EVALUATION FOR CYCLES 1-5" (TAC NO. ME3902)

Dear Mr. Czufin:

By letter dated February 8, 2010, the Boiling Water Reactor Vessel and Internals Project (BWRVIP) submitted proprietary (and non-proprietary) versions of the report BWRVIP-117-A (BWRVIP-117NP-A), "RAMA Fluence Methodology for Plant Application – Susquehanna Unit 2 Surveillance Capsule Fluence Evaluation for Cycles 1-5," for U.S. Nuclear Regulatory Commission (NRC) staff review (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100480184.)

The BWRVIP-117 report describes the results of a surveillance capsule fluence evaluation performed for the Susquehanna Unit 2 reactor at the end of cycle 5. The report incorporates corrections and modifications based on the NRC's review of the BWRVIP-117 report, the first copy of which was submitted for NRC review by letter dated August 5, 2003.

The report compiles information associated with the NRC staff's review of BWRVIP-117; namely, it adds the 10 items compiled in Table C.1 of Appendix C to BWRVIP-117-A. These 10 items are revisions associated with an NRC staff request for additional information (RAI) transmitted by letter dated April 20, 2004 (ADAMS Accession No. ML041130513), to which Electric Power Research Institute (EPRI) responded by letter dated September 29, 2004 (ADAMS Accession No. ML042750357).

The first revision noted in Table C-1 added the NRC correspondence referenced above. Specifically, the RAI letter was appended as Appendix A, and EPRI's response was appended as Appendix B. This is in accordance with the NRC's process for publication of approved topical reports, and hence acceptable.

The next three items in Table C-1 are revisions to Sections 2 and 3 of BWRVIP-117, all of which were incorporated based on BWRVIP's response to the NRC RAI. The changes clarify EPRI's treatment of analytical bias and add clarification regarding the determination and treatment of core state point data. These changes are responsive to the NRC RAI, and are hence acceptable.

The fifth item in Table C-1 describes an editorial change. The change is acceptable because it is editorial in nature and therefore does not affect the way in which the methodology is applied.

The sixth, seventh, and eighth items in Table C-1 are revisions to Sections 4 and 5 of BWRVIP-117, which were incorporated based on the BWRVIP's response to the NRC RAI. The changes provide additional details about the geometric modeling of the Susquehanna reactor vessel, include language that is consistent with NRC Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Reactor Vessel Neutron Fluence," and provide practical information regarding the treatment of analytic bias. These changes are responsive to the NRC staff RAI and are hence acceptable.

The ninth item in Table C-1 is updated citations listed in the References Section of the report with current report dates. This change is administrative in nature and hence acceptable.

The final item in Table C-1 is the addition of an "Implementation Requirements" Section to clarify that this report is provided to member utilities for information use only. Unlike numerous other BWRVIP reports, the BWRVIP utilities are not required to implement BWRVIP-117 for several reasons. One reason is that RAMA is the BWRVIP-developed fluence methodology but it is not the only fluence methodology available that has been approved by the NRC. Since there are such other methodologies available, it was not appropriate for the BWRVIP to "require" RAMA to be used by imposing an Nuclear Energy Institute (NEI) 03-08 implementation requirement. Additionally, the information in BWRVIP-117-A is used to justify and benchmark the RAMA fluence methodology and, as such, there are no requirements or recommendations in the report for utilities to implement and, thus, no NEI 03-08 implementation requirement. Hence, this change is also acceptable.

Based on the discussion above, the NRC staff has determined that the BWRVIP-117-A report is acceptable to the extent delineated in the NRC staff's original approval letter, dated May 13, 2005. The revisions to the topical report, submitted in the approved copy, do not affect the NRC's approval status of this topical report.

Based on the discussion of revisions above, the NRC staff has determined that BWRVIP-117-A, Revision 1, is acceptable. Please contact my staff, Andy Hon at (301) 415-8480 or Jonathan Rowley at (301) 415-4053, if you have any further questions regarding this subject.

Sincerely,

/RA/

Thomas B. Blount, Deputy Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 704

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Thomas B. Blount, Deputy Director
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Project No. 704

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Dated: April 18, 2011

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cc:

Randy Stark, EPRI BWRVIP
Integration Manager
Raj Pathania, EPRI BWRVIP
Mitigation Manager
Ken Wolfe, EPRI BWRVIP
Repair Manager
Larry Steinert, EPRI BWRVIP
Electric Power Research Institute
3420 Hillview Ave.
Palo Alto, CA 94304
rstark@epri.com,
rpathani@epri.com,
kwolfe@epri.com,
ldsteine@contractor.epri.com

Randy Schmidt, Technical Chairman
BWRVIP Assessment Committee
PSEG Nuclear
P. O. Box 236 (M/S H06)
Hancocks Bridge, NJ 08038-0236
randal.schmidt@pseg.com

Dennis Rickertsen, Technical Chairman
BWRVIP Mitigation Committee
Southern Nuclear Operating Company
P. O. Box 1295 (M/S B234)
Birmingham, AL 35201-1295
ddricker@southernco.com

Paul J. Davison, Executive Chairman
BWRVIP Assessment Committee
PSEG Nuclear, LLC
Salem/Hope Creek Nuclear Station
11 Yubas Ave.
Burlington, NJ 08016
paul.davison@pseg.com

Denver Atwood, Chairman
BWRVIP Repair Focus Group
Southern Nuclear Operating Co.
Post Office Box 1295
40 Inverness Center Parkway
(M/S B031)
Birmingham, AL 35242-4809
dgatwood@southernco.com

Rich Ciemiewicz, Chairman
BWRVIP Inspection Focus Group
Exelon Corporation
200 Exelon Way, Suite 210 (M/S KSA 2-N)
Kennett Square, PA 19349
richard.ciemiewicz@exeloncorp.com

Charles J. Wirtz, Technical Chairman
BWRVIP Integration Committee
FirstEnergy Corp.
Perry Nuclear Power Plant
(M/S A250)
10 Center Road
Perry, OH 44081
cjwirtz@firstenergycorp.com

Oscar Limpias,
BWROG Chairman
Entergy Nuclear Operations, Inc.
Echelon One
1340 Echelon Parkway.
Jackson, MS 39213-8202
olimpia@entergy.com

Robert Whalen, Executive Chairman
BWRVIP Mitigation Committee
Tennessee Valley Authority (TVA)
1101 Market Street
Chattanooga, TN 37402-2801
rjwhalen@tva.gov

Robert Carter, EPRI BWRVIP
Assessment Manager
Jeff Landrum, EPRI BWRVIP
Inspection Manager
EPRI NDE Center
P.O. Box 217097
1300 W. T. Harris Blvd.
Charlotte, NC 28221
bcarter@epri.com
jlandrum@epri.com

cc:

Dennis Madison
BWRVIP Vice Chairman
Site Vice President
Southern Nuclear Operating Co.
Edwin I. Hatch Nuclear Plant
11028 Hatch Parkway N
Baxley, GA 31515-2010
drmadiso@southernco.com