June 10, 2010

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON BWRVIP-18, REVISION 1, "BWR VESSEL AND INTERNALS PROJECT: BWR CORE SPRAY INTERNALS INSPECTION AND FLAW EVALUATION GUIDELINES" (TAC NO. ME2189)

Dear Mr. Czufin:

By letter dated February 10, 2009 (Agencywide Documents Access and Management System Accession No. ML090490564), the Boiling Water Reactor Vessel and Internals Project (BWRVIP) submitted for U.S. Nuclear Regulatory Commission (NRC) staff review BWRVIP-18, Revision 1, "BWRVIP Vessel and Internals Project: BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines," which provides inspection requirements and leakage calculations for inaccessible welds in the core spray system. Upon review of the information provided, the NRC staff has determined that additional information is needed to complete the review. Mr. Larry Steinert of your staff and Ralph Architzel of the NRC staff agreed that the response to the enclosed Request for Additional Information (RAI) will be received within six months of the date of this letter. If you have any questions regarding the enclosed RAI questions, please contact me at 301-415-4053.

Sincerely,

/RA/

Jonathan Rowley Project Manager
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 704

Enclosure:
Request for Additional Information

cc w/encl: See next page

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BWRVIP
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PROJECT NO. 704

REQUEST FOR ADDITIONAL INFORMATION

BWRVIP-18, REVISION 1 "BWR VESSEL AND INTERNALS PROJECT:

BWR CORE SPRAY INTERNALS INSPECTION AND FLAW EVALUATION GUIDELINES"

In a letter dated February 10, 2010, the Boiling Water Reactor Vessel Internals Project (BWRVIP) submitted topical report BWRVIP-18, Revision 1, "BWRVIP Vessel and Internals Project: BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines," which provides inspection requirements and leakage calculations for inaccessible welds in the core spray system. The U.S. Nuclear Regulatory Commission (NRC), Vessels and Internals Integrity Branch, is in the process of reviewing the report. Based on the review conducted thus far, the NRC staff has developed a request for additional information (RAI) as addressed below.

RAI 1

Generally, type 304 stainless steel material is more susceptible to intergranular stress corrosion cracking (IGSCC) than type 304L stainless steel material and creviced welds are more susceptible to IGSCC than non-creviced welds. There may be welds in the core spray system that are inaccessible for inspection. Table 3-6 and Section 3.4 in the BWRVIP-18, Revision 1, provide inspection requirements for inaccessible welds based on plant-specific cracking experience of similar accessible welds in each boiling water reactor (BWR) design i.e., BWR/2, BWR/3-5 and BWR/6. The staff requests that the BWRVIP confirm whether the following scenarios exist in the BWR fleet:

(1) For BWR/2 design—(a) the base metal for accessible welds is type 304L stainless steel material and the welds are not creviced and (b) the base metal for similar inaccessible welds (P4a, thermal sleeve welds inside the vessel nozzle and P9) is type 304 stainless steel material and the welds are creviced.

(2) For BWR/3-5 design—(a) the base metal for accessible welds is type 304L stainless steel material and the welds are not creviced and (b) the base metal for similar inaccessible welds (P1, thermal sleeve welds and P9) is type 304 stainless steel material and the welds are creviced.

(3) For BWR/6 design—(a) the base metal for accessible welds is type 304L stainless steel material and the welds are not creviced and (b) the base metal for inaccessible welds (P1a, P1b, and thermal sleeve welds) is type 304 stainless steel material and the welds are creviced.

Any BWR unit falling under one of these scenarios is likely to have inaccessible welds which would experience IGSCC prior to any detection of IGSCC in the accessible welds. Therefore, the BWRVIP is requested to provide: (1) an identification of the BWR unit that falls under any one of the aforementioned scenarios; and (2) a confirmation that

ENCLOSURE

if plant-specific inspection criteria require revision for the inaccessible welds, the revised inspection criteria should be provided to the staff for review.

RAI 2

Paragraph 1 in Section 3.4.2 of the BWRVIP-18, Revision 1, states, “when 75 percent of the similar welds are cracked, the integrity of the associated inaccessible welds must be assessed as described in Section 3.4.3.” The staff requests that the BWRVIP provide a technical basis for establishing this criterion.