May 19, 2008

Mr. Randy C. Bunt, Chair
BWR Owners' Group
Southern Nuclear Operating Company
40 Inverness Center Parkway/Bin B057
Birmingham, AL 35242

SUBJECT: REQUEST FOR THE REVIEW OF THE BOILING WATER REACTORS OWNERS' GROUP (BWROG) TOPICAL REPORT (TR) NEDO-33163, "HIGH BURN UP BWR FUEL ROD GAP RELEASE FRACTIONS" (TAC NO. MD1764)

Dear Mr. Bunt:

By letter dated March 30, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML060940462), the BWROG submitted TR NEDO-33163, "High Burn Up BWR Fuel Rod Gap Release Fractions" to the U.S. Nuclear Regulatory Commission (NRC) staff for review. The NRC accepted NEDO-33163 for review in letter dated August 4, 2006 (ADAMS Accession No. ML062090257). The main objective of NEDO-33163 is to extend the applicability of the fission-product inventory gap fractions in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (ADAMS Accession No. ML003716792), in order to allow higher power/higher burnup fuel rods. In addition, the analytical methods used to derive the revised gap fractions would serve as guidance for future applicants wishing to derive more specific (e.g., less limiting) values.

A request for additional information (RAI) was issued on February 16, 2007 (ADAMS Accession No. ML070230581). The BWROG provided responses on May 22, 2007. After reviewing the information presented in TR NEDO-33163 and in the BWROG response to the RAI, the NRC staff had concerns with the degree of conservatism within the methods employed in the BWROG calculations. Specifically, the modeling uncertainty in predicting fission gas release, which relates to the spread within the fission gas measurement database, needs to be included in the fission-product gap fraction calculations.

With the recently adopted improved American Nuclear Society (ANS) 5.4 model, the NRC staff is now in a position to (1) revise and extend the applicability of the fission-product inventory gap fractions and (2) provide an application methodology with adequate conservatism to guide future applicants. Upon completion of these two items, the NRC staff will have satisfied the original objectives of TR NEDO-33163. A revision to RG 1.183 is planned within the next 12 months. It is the NRC staff's intent, provided an acceptable methodology can be developed, to incorporate the revised fission-product inventory gap fractions in the revision to RG 1.183 that is currently underway. Therefore, further review or revision of TR NEDO-33163 is no longer required.

The issues raised and resolved during the NRC staff's review of TR NEDO-33163 proved to be the catalyst for (1) finalizing the ANS 5.4 model, (2) developing an application methodology to guide future applicants, and (3) expanding the applicability of RG 1.183. Hence, TR NEDO-33163 has met its ultimate goal of providing fuel management flexibility for future applicants.

As discussed above further review and/or revision of TR NEDO-33163 is no longer required. The NRC staff has discontinued its review and therefore will not issue a safety evaluation approving use of TR NEDO-33163. The TAC associated with this review will be closed upon issuance of this letter.

Sincerely,

/RA/

Ho K. Nieh Deputy Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 691

cc: See next page

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/RA/

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