May 18, 2009

Mr. Richard Webster, Esq.
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744 Broad Street, Suite 1525
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SUBJECT: RESPONSE TO JANUARY 6, 2009, LETTER TO CHAIRMAN KLEIN REGARDING THE THREE DIMENSIONAL FINITE ELEMENT ANALYSIS OF THE OYSTER CREEK DRYWELL SHELL SUBMITTED BY EXELON NUCLEAR ON JANUARY 22, 2009

Dear Mr. Webster:

I am writing in response to your January 26, 2009, letter to Chairman Klein regarding the three dimensional finite element analysis (3-D FEA) of the Oyster Creek drywell shell submitted by Exelon Nuclear on January 22, 2009, and as directed by the Commission in their April 1, 2009, Memorandum and Order (CLI-09-07). We have considered your points in the context of our review. The U.S. Nuclear Regulatory Commission staff (NRC or the staff) has completed its review of Exelon's submittal consistent with the Commission's direction "to use its expertise and engineering judgment to scrutinize carefully, Exelon's compliance as part of its oversight responsibilities." Our assessment and evaluation of 3-D FEA is reflected in the attached report, available in the Agencywide Document Access and Management System (ADAMS) Accession Number ML091310413.

The staff completed its review of the 3-D FEA utilizing structural engineering experts and senior staff members to scrutinize Exelon's submittal in light of the Atomic Safety and Licensing Board (ASLB) decision (LBP-07-17), Judge Barrata's separate opinion, the ASLB advisory opinion, and the Commission's Memorandum and Order. The staff determined that Exelon's use of the modified capacity reduction factor (CRF) was adequately supported and results in a conservative best estimate of the margin of safety for the drywell shell. The specific use of the modified CRF in accordance with Dr. Clarence Miller's tests regarding stresses in spherical components such as the drywell shell, as used by Exelon in their analysis, has been formally adopted for the American Society for Mechanical Engineers (ASME) Boiler & Pressure Vessel Code, Code Case N-759, "Alternative Rules for Determining Allowable External Pressure and Compressive Stresses for Cylinders, Cones, Spheres, and Formed Heads."

The staff determined that Exelon's sensitivity analyses were performed using good engineering practices and judgment and that the sensitivity analyses adequately evaluated the effect of the size of the thinned areas on the ASME Code margins. As discussed in the attachment, three separate analyses of Oyster Creek's drywell shell have demonstrated that the ASME Code margins are met. Further, two independent reviews of the 3-D FEA, including the attached staff's assessment, have determined that Exelon performed a modern analysis in compliance with the ASME code and adequately analyzed the sensitivity cases for the drywell shell. The staff plans to brief the Advisory Committee on Reactor Safeguards on this subject in September of this year.

If you have questions or concerns regarding this letter or the attached assessment of the 3-D FEA, please contact Mr. Kamal Manoly of the Division of Engineering staff at 301-415-2765. Mr. Manoly and other NRC staff are planning to be available to discuss these issues at the NRC Annual Assessment Meeting for Oyster Creek on May 28, 2009.

Sincerely,

/RA/

Brian E. Holian, Director
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure:
As stated

cc w/encl: See next page

If you have questions or concerns regarding this letter or the attached assessment of the 3-D FEA, please contact Mr. Kamal Manoly of the Division of Engineering staff at 301-415-2765. Mr. Manoly and other NRC staff are planning to be available to discuss these issues at the NRC Annual Assessment Meeting for Oyster Creek on May 28, 2009.

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Letter to Richard Webster from Brian E. Holian dated May 18, 2009

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