

September 10, 2013

MEMORANDUM TO: Veronica M. Rodriguez, Acting Chief  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

FROM: Richard B. Ennis, Senior Project Manager */ra/*  
Plant Licensing Branch I-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1, DRAFT  
REQUEST FOR ADDITIONAL INFORMATION (TAC NO. ME8237)

The attached draft request for additional information (RAI) was transmitted on September 10, 2013, to Mr. Thomas Loomis of Exelon Generation Company, LLC (Exelon, the licensee). This information was transmitted to facilitate an upcoming conference call in order to clarify the licensee's letter dated December 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12349A175).

The draft RAI was sent to Exelon to ensure that the questions are understandable, the regulatory basis for the questions is clear, and to determine if the information was previously docketed. This memorandum and the attachment do not convey or represent an NRC staff position regarding the licensee's submittal.

Docket No. 50-289

Attachment: Draft RAI

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**ACCESSION NO.: ML13253A225**

OFFICE	LPL1-2/PM
NAME	REnnis
DATE	09/10/13

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DRAFT REQUEST FOR ADDITIONAL INFORMATION

30-DAY REPORT FOR EMERGENCY CORE COOLING SYSTEM MODEL ERRORS

EXELON GENERATION COMPANY, LLC

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

DOCKET NO. 50-289

By letter dated March 21, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12081A083), Exelon Generation Company, LLC, (Exelon, the licensee) submitted a 30-day report, pursuant to Section 50.46 of Title 10 of the *Code of Federal Regulations* (10 CFR) for Three Mile Island Nuclear Station, Unit 1 (TMI-1). The licensee's report provided notification to the Nuclear Regulatory Commission (NRC) regarding two peak cladding temperature (PCT) changes due to evaluation model errors.

The requirements in 10 CFR 50.46(a)(3)(i) state, in part, that licensees "shall estimate the effect of any change to or error in an acceptable evaluation model or in the application of such a model to determine if the change or error is significant. For this purpose, a significant change or error is one which results in a calculated peak fuel cladding temperature different by more than 50 °F from the temperature calculated for the limiting transient using the last acceptable model, or is a cumulation of changes and errors such that the sum of the absolute magnitudes of the respective temperature changes is greater than 50 °F."

Exelon's letter dated March 21, 2012, reported that, for the first error, the PCT is estimated to decrease by 80 °F. For the second error, the PCT is estimated to increase by 80 °F. Both errors pertain to the large break loss-of-coolant accident (LBLOCA) analysis.

On November 13, 2012, the NRC staff issued a Request for Additional Information (RAI) to the licensee (ADAMS Accession No. ML12310A175) regarding the 30-day report which, in part, stated, the following:

Paragraph 50.46(a)(3)(ii) states: "...If the change or error is significant, the applicant or licensee shall provide this report within 30 days and include with the report a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 50.46 requirements..."

The PCT for LBLOCA for TMI-1 has changed by an absolute value of 160 °F since the analysis was performed. Simply reporting the changes and errors in the methodology does not satisfy the intent of the regulation.

Justify not providing a schedule for reanalysis or taking other action to show compliance with Section 50.46.

The licensee responded to the RAI on December 12, 2012 (ADAMS Accession No. ML12349A175).

The NRC staff is reviewing your submittal dated December 12, 2012, and has determined that additional information is needed to complete its review. The specific RAI is addressed below.

**RAI-1**

The RAI response does not include a proposed schedule for providing a reanalysis. In the response, the licensee states that the PCT error evaluations are supported by explicit analyses using the Babcock and Wilcox (B&W) plant emergency core cooling system (ECCS) evaluation model. Since a schedule for reanalysis was not provided, justify how generic analysis for the B&W plant ECCS evaluation model constitutes "taking other action" to show compliance with 10 CFR 50.46. In particular, while the submitted RAI response addresses the acceptance criteria contained in 10 CFR 50.46(b), the response does not address the requirement, in 10 CFR 50.46(a)(1)(i), to calculate ECCS cooling performance "in accordance with an acceptable evaluation model." In light of the presently reported, significant, estimated effects of errors and changes, explain how the present ECCS cooling performance has been calculated in accordance with an acceptable evaluation model, such that any other action, as provided in 10 CFR 50.46(a)(3), has been taken to show compliance with 10 CFR 50.46 requirements, including those contained in 10 CFR 50.46(a)(1). Alternatively, submit a schedule for providing a reanalysis or taking other action as may be necessary to show compliance with 10 CFR 50.46 requirements.