



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 21, 2014

MEMORANDUM TO: Robert G. Schaaf, 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: LIMERICK GENERATING STATION, UNITS 1 AND 2, DRAFT
REQUEST FOR ADDITIONAL INFORMATION (TAC NOS. MF3085
AND MF3086)

The enclosed draft request for additional information (RAI) was transmitted on July 21, 2014, to Mr. Frank Mascitelli 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 amendment request for Limerick Generating Station (LGS), Units 1 and 2 dated November 15, 2013. The proposed amendment would revise the Technical Specification requirements related to the response time for the main steam line flow-high isolation function.

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 enclosure do not convey or represent an NRC staff position regarding the licensee's request.

Docket Nos. 50-352 and 50-353

Enclosure: Draft RAI

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ACCESSION NO.: ML14202A518

OFFICE	LPL1-2/PM
NAME	REnnis
DATE	7/21/14

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DRAFT REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED LICENSE AMENDMENT
MAIN STEAM LINE FLOW-HIGH ISOLATION RESPONSE TIME
EXELON GENERATION COMPANY, LLC
LIMERICK GENERATING STATION, UNITS 1 AND 2
DOCKET NOS. 50-352 AND 50-353

By application dated November 15, 2013, as supplemented by letter dated April 16, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML13322A448 and ML14106A642, respectively), Exelon Generation Company, LLC (Exelon, the licensee), submitted a license amendment request for Limerick Generating Station (LGS), Units 1 and 2. The proposed amendment would revise the Technical Specification (TS) requirements related to the response time for the main steam line flow-high isolation function.

The Nuclear Regulatory Commission (NRC) staff has reviewed the information the licensee provided that supports the proposed amendment and would like to discuss the following issues to clarify the submittal.

1. Section 3.0 of Attachment 1 to the application dated November 15, 2013, states that the current analysis of record for the LGS main steam line break (MSLB) loss-of-coolant accident peak cladding temperature response is documented in General Electric topical report NEDC-32170P, Revision 2, May 1995. If this topical report has already been submitted to the NRC, please identify the document which submitted the report, otherwise submit the report.
2. Section 4.1 of Attachment 1 to the application lists 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 46 as "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors." That title pertains to 10 CFR 50.46, not GDC 46. Please clarify the applicable regulatory requirements/criteria that pertain to this amendment request.
3. As discussed in Section 3.0 of Attachment 1 to the application, GE Hitachi Nuclear Energy (GEH) performed a MSLB outside of containment (STMO) analysis using the evaluation model SAFER04A. The licensee stated that the SAFER simulation of the analysis provides fuel heat-up and long-term cooling system response. The NRC staff requests that the licensee provide additional information to support the following statement in the submittal: "This methodology is more accurate than the current method which is based on simplifying assumptions as described in UFSAR [Updated Final Safety Analysis Report] Section 15.6.4." In addition, Attachment 4 to the application, GEH document 0000-0158-9651-NP, states on page 3 that:

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LGS UFSAR 15.6.4.4.f: "Level rise time is conservatively assumed to be 1 second. Mixture quality is conservatively taken to be a constant 7% (steam weight percentage) during mixture flow." This assumption is not necessary. SAFER is a systems code and can calculate the time varying two phase break flow during the STMO event.

The original and the newly submitted analysis are based on SAFER evaluation model. Why is the above assumption not necessary now? Describe the SAFER code changes, if any, to justify the deletion of this key assumption.

Confirm whether or not the following assumptions currently listed in UFSAR Section 15.6.4.4, and discussed in Attachment 1 to the application, will be revised as part of the implementation of the proposed amendment:

- d. Isolation valves start to close at 0.5 seconds on high flow signal and are fully closed at 5.5 seconds.
- f. Level rise time is conservatively assumed to be 1 second. Mixture quality is conservatively taken to be a constant 7% (steam weight percentage) during mixture flow.