



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

July 2, 2010

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 - REQUEST FOR
ADDITIONAL INFORMATION REGARDING MEASUREMENT UNCERTAINTY
RECAPTURE POWER UPRATE (TAC NOS. ME3589, ME3590, ME3591 AND
ME3592)

Dear Mr. Pacilio:

By letter dated March 25, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100850380), Exelon Generation Company, LLC (Exelon) submitted a license amendment request (LAR) proposing to revise the operating license and technical specifications for Limerick Generating Station (LGS), Units 1 and 2. This LAR proposes to implement an increase of approximately 1.65% in rated thermal power from the current licensed thermal power limit of 3458 megawatts thermal.

The Nuclear Regulatory Commission staff has been reviewing the response and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). The questions were sent via electronic transmission on June 21, 2010, to Mr. Kevin Borton, of your staff. The draft questions were sent to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. The draft questions were discussed in a teleconference with your staff on June 30, 2010, where question 3 was modified. It was agreed that a response to items 1-3 of this RAI would be submitted by July 30, 2010, and a response to item 4 would be submitted by August 16, 2010.

Please contact me at 301-415-2833, if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Peter Bamford".

Peter Bamford, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosure:
As stated

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REQUEST FOR ADDITIONAL INFORMATION
LIMERICK GENERATING STATION, UNITS 1 AND 2
MEASUREMENT UNCERTAINTY RECAPTURE
POWER UPRATE REQUEST
DOCKET NOS. 50-352 AND 50-353

By letter dated March 25, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100850380), Exelon Generation Company, LLC (Exelon, the licensee) submitted a license amendment request (LAR) proposing to revise the operating license and technical specifications for Limerick Generating Station (LGS), Units 1 and 2. This LAR proposes to implement an increase of approximately 1.65% in rated thermal power from the current licensed thermal power limit of 3458 megawatts thermal. The increase would be based on the improved thermal power measurement accuracy, which would be achieved through the utilization of the Cameron International (formerly Caldon) CheckPlus™ leading edge flowmeter (LEFM) ultrasonic flow measurement instrumentation. The application also proposes a modification to the standby liquid control system (SLCS). The Nuclear Regulatory Commission (NRC) staff has been reviewing the submittal and has determined that additional information is needed to complete its review.

- (1) Attachment 1 to the LAR letter, dated March 25, 2010, states that the scope and content of the evaluations performed and described in the LAR are consistent with the guidance of NRC Regulatory Issue Summary (RIS) 2002-03, "Guidance on the Content of Measurement Uncertainty Recapture Power Uprate Applications." RIS 2002-03, Attachment I, Section VII.2.A requests:

A statement confirming that the license has identified all modifications associated with the proposed power uprate with respect to the following aspects of plant operations that are necessary to ensure that changes in operator actions do not adversely affect defense in depth or safety margins:

- A. emergency and abnormal operating procedures...

In the submittal dated March 25, 2010, Attachment 6,¹ Section 10.9, emergency operating procedures are discussed. However, there is no mention of required changes to the current abnormal operating procedures. Please provide, if any, a summary of the required changes for the abnormal operating procedures.

¹ Attachment 6 is a report by General Electric (GE)-Hitachi Nuclear Energy, NEDC-33484P, titled "Safety Analysis Report for Limerick Generating Station Units 1 and 2 Thermal Power Optimization," Revision 0, dated March 2010. A non-proprietary version of this report (NEDO-33484, same title) is available at ADAMS Accession No. ML100850403.

- (2) Section VII.4 of Attachment 1 to RIS 2002-03 requests: "A statement confirming licensee intent to revise existing plant operating procedures related to temporary operation above "full steady-state licensed power levels" to reduce the magnitude of the allowed deviation from the licensed power level. The magnitude should be reduced from the pre-power uprate value of 2 percent to a lower value corresponding to the uncertainty in power level credited by the proposed power uprate application." In the submittal, dated March 25, 2010, Attachment 1, Section 3.2.6, Exelon states that LGS procedure GP-5 Section 3.0, notes 5 and 6 provides guidance for monitoring and controlling reactor power consistent with Nuclear Energy Institute (NEI) guidance.² However, this information is not available in the submittal. Please provide procedure GP-5, or the information contained therein.
- (3) According to the LGS Updated Final Safety Evaluation Report, Section 3.1, page 3.1-23, the SLCS provides an independent backup system for reactivity control in accordance with the requirements of 10 CFR 50, Appendix A, Criterion 26, "Reactivity control system redundancy and capability." In order to assess the reliability of the SLCS in the proposed revised configuration as specified in Criterion 26, the following information is needed:
- a. Describe how the modification will be integrated with the probabilistic risk assessment and risk analysis.
 - b. Describe how the modification addresses operator task requirements.
 - c. Describe the alarms, displays and controls needed for the operator to operate the SLCS system with the proposed switch alignment.
 - d. Describe how the modification will be incorporated into operator training.
 - e. Describe how the normal, abnormal, and emergency operating procedures will be modified to support this change.
- (4) According to the LAR Attachment 1, Section 3.5.2, regarding the TS implications of an improper SLCS switch alignment of the "C" pump, the following is stated: "For the condition in which three pumps are aligned for automatic operation, action statement "b" applies, and requires that the system shall be restored to operable status [less than three pumps lined up for automatic operation] within eight hours or be in hot shutdown within the following twelve hours." Since having three pumps lined up for automatic operation would lead to a limiting condition for operation not being met, the provisions of 10 CFR 50.36(c)(3) require that an appropriate surveillance be in place to assure SLCS system operability. No such surveillance was proposed in the LAR. Please provide an amended application with an appropriate surveillance, or provide a justification as to why no corresponding surveillance requirement was proposed in the LAR regarding the switch position(s).

²The referenced NEI guidance is titled "NEI Position Statement – "Guidance to Licensees on Complying with the Licensed Power Limit," dated 06/12/2008 (ADAMS Accession No. ML081750537). The NEI guidance was endorsed by the NRC staff via RIS 2007-21, "Adherence to Licensed Power Limits," Revision 1, dated February 9, 2009 (ADAMS Accession No. ML090220365). The associated NRC safety evaluation for the endorsement of the NEI guidance may be found at ADAMS Accession No. ML082690105.

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/ra/

Peter Bamford, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosure: As stated

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ADAMS Accession Number: ML101690121

* concurrence via memo

OFFICE	LPLI-2/PM	LPLI-2/LA	IHPB/BC	LPL1-2/BC
NAME	PBamford	ABaxter	UShoop*	HChernoff (w/comment)
DATE	6/30/10	7/1/10	06/11/2010	7/2/10

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