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

July 15, 2010

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

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

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 currently 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 July 8, 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 July 14, 2010, where clarifying edits were made to question numbers 1 and 8. It was agreed that a response to this RAI would be submitted by August 16, 2010.

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

Sincerely,

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 (MUR)

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 (TSs) 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 currently 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 ultrasonic flow measurement instrumentation. The Nuclear Regulatory Commission staff has been reviewing the submittal and has determined that additional information is needed to complete its review.

1. The Power Grid Uprate Voltage Analysis for LGS (Attachment 12) of the LAR did not consider a LGS dual unit trip scenario and its impact on grid stability after the increased loading of the power uprate? Explain in detail why an LGS dual unit trip scenario after uprate was not considered and analyzed?

2. In the LAR, Attachment 1, Section 3.4.1, the licensee concludes that there will be a minor increase in normal power system loads. Provide a detailed discussion demonstrating that the minor increase in normal power system loads due to the uprate will not impact the degraded voltage relay (DVR) allowable value for loss of power covered by LGS, Unit 1 and 2, TS 3/4.3.3, Table 3.3.3-2.

3. In the LAR, Attachment 1, Section 3.4.1, the licensee concludes that there will be small increases in normal operational radiation levels. Discuss in detail how the small increases in normal operational radiation levels will not affect the existing equipment qualification (EQ) per 10 CFR 50.49.

4. In the LAR, Attachment 12, Section 4, of the Power Grid Uprate Voltage Analysis for LGS, the licensee states that in situations where voltage drops exceeded 0.03 per unit, additional analysis was performed to incorporate system adjustments between contingencies. Transformer taps and automatically switched capacitors were allowed to change to regulate voltage. Provide a detailed discussion about the load tap-changing transformers and automatic switched capacitor banks which were allowed to function automatically in the additional analyses. Clarify if these system adjustments and the transformer tap changes will result in any plant design modifications to ensure that voltage drop will not exceed 0.03 per unit.

5. The LAR, Attachment 6[1], Table 6-2, shows the main generators maximum nominal rating for the uprated condition as 1138.47 MWe [Megawatts electric] and 551.39 MVar [Megavolt-amp-reactive]. The main generators maximum nominal rating of 1138.47 MWe is significantly lower than the expected full load generator output value of 1240 MWe for winter following MUR power uprate, as specified in the LAR, Attachment 12, Appendix B page 2 of 5. Please explain how the main generators worst case (winter) expected MWe output can exceed the maximum nominal MWe rating.

6. Please specify the worst case MWe and MVar loadings on LGS, Unit 1 and 2 main generator step-up transformers for both existing and uprated conditions, and discuss how the uprated loading is within the capability of the transformers.

7. The LAR, Attachment 6, Section 10.3.1 states that the conservatism in the equipment qualifications were originally applied to the environmental parameters and no change is needed for the TPO [thermal power optimization] uprate. Please discuss in detail what specific conservatism in the environmental parameters of the original EQ evaluations, when applied to uprated conditions, results in the existing EQ evaluations bounding the uprated normal and accident conditions.

8. Provide EQ profiles for the EQ areas where temperature and or pressure will increase due to uprate to demonstrate that the existing EQ profiles bound the uprated EQ profiles for both normal and accident conditions. In addition, confirm that the EQ margins required per IEEE-323,[2] Section 6.3.1.5 ("Margin"), for both inside and outside containment will be maintained for the uprated condition.

9. The LAR, Attachment 6, Section 10.3.1.1, states, "Normal temperatures may increase slightly near the Feedwater and Reactor Recirculation lines and will be evaluated through the EQ temperature monitoring program..." Discuss the expected magnitude, and resulting expected impact, of the increased temperatures on the safety-related equipment in the area.

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[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] The LGS Updated Final Safety Analysis Report provides a description of the LGS commitment to IEEE-323.

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