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10 CFR 50.90

July 18, 2008

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
Docket Nos. 50-352 and 50-353

Subject: Response to Request for Additional Information Concerning License Amendment Request to Revise Local Power Range Monitor Calibration Frequency

References:

1) Letter from Pamela B. Cowan, Exelon Generation Company, LLC, to U. S. Nuclear Regulatory Commission, "License Amendment Request - Revise Local Power Range Monitor Calibration Frequency," dated October 19, 2007

2) Letter from Pamela B. Cowan, Exelon Generation Company, LLC, to U.S. Nuclear Regulatory Commission, "License Amendment Request - Revise LPRM Calibration Frequency - Supplemental Response - Global Nuclear Fuel Report - 'Limerick LPRM Calibration Interval Extension Support,'" dated March 14, 2008

3) Letter from Pamela B. Cowan, Exelon Generation Company, LLC, to U.S. Nuclear Regulatory Commission, "License Amendment Request - Revise LPRM Calibration Frequency - Supplemental Response - Global Nuclear Fuel Report - GNF S-0000-0082-2744, Rev. 0, 'Limerick LPRM Calibration Interval Extension Support' (March 4, 2008)," dated March 26, 2008

4) Letter from Peter J. Bamford, U.S. Nuclear Regulatory Commission, to Mr. Charles G. Pardee, Exelon Generation Company, LLC, Limerick Generating Station, Unit Nos. 1 and 2, - Request for Additional Information Regarding Proposed Local Power Range Monitor Calibration Frequency Revision (TAC Nos. MD7048 and MD7049), dated June 20, 2008

Attachment 1 transmitted herewith contains SUNSI. When separated from the attachment, this transmittal document is decontrolled.

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By letter dated October 19, 2007 (Reference 1), Exelon Generation Company, LLC (Exelon) requested changes to the Technical Specifications (TS), Appendix A of Facility Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively. The proposed changes would increase the interval between Local Power Range Monitor (LPRM) calibrations from 1000 Effective Full Power Hours (EFPH) to 2000 EFPH.

The License Amendment Request (LAR) was supplemented by letters dated March 14, 2008 (Reference 2), and March 26, 2008 (Reference 3), to provide additional documentation prepared by Global Nuclear Fuel (GNF) in support of the LAR.

By letter dated June 20, 2008 (Reference 4), the NRC issued a Request for Additional Information (RAI) concerning the LGS LAR. In particular, the NRC requested that Exelon further discuss the relationship between EFPH and Megawatt Days per short ton (MWD/st), and the impact of applying the LPRM update uncertainty value on the Safety Limit Minimum Critical Power Ratio (MCPR) calculation. The questions identified in Reference 4 were further discussed during subsequent telephone conversations on June 16, 2008 and July 10, 2008, between representatives of the NRC, Exelon, and GNF.

Attachment 1 to this letter restates each of the NRC's questions followed by Exelon's response. Attachment 1 contains information prepared by GNF in support of this RAI response, which GNF considers to be of a proprietary nature as defined by 10 CFR 2.390. GNF, as the owner of the proprietary information, has executed the attached affidavit (Attachment 3). The affidavit describes information as being classified as proprietary, customarily held in confidence, and to be withheld from public disclosure. The proprietary information was provided to support this RAI response for LGS, Units 1 and 2. The proprietary information has been faithfully reproduced and included in the attached RAI response such that the affidavit remains applicable. The proprietary information is identified by bracketed text. GNF requests that the proprietary information in Attachment 1 be withheld from public disclosure in accordance with the requirements of 10 CFR 9.17(a)(4) and 10 CFR 2.390(a)(4). Attachment 2 to this letter provides a non-proprietary version of the response to the NRC questions. The original signed affidavit pertaining to the proprietary nature of the supporting GNF information is included in Attachment 3 to this letter. Attachment 4 provides a summary of the regulatory commitments made in this submittal.

Exelon has concluded that the information provided in this response does not impact the conclusions of the: 1) Technical Analysis, 2) No Significant Hazards Consideration under the standards set forth in 10 CFR 50.92(c), or 3) Environmental Consideration as provided in the original submittal (Reference 1).

If you have any further questions or require additional information, please contact Richard Gropp at 610-765-5557.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 18th day of July 2008.

Respectfully,

Darin Benyak

Darin Benyak
Director - Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachment 1: Response to Request for Additional Information (Proprietary Version)
Attachment 2: Response to Request for Additional Information (Non-Proprietary Version)
Attachment 3: Global Nuclear Fuel - Supporting Affidavit for Response to RAIs for Limerick LPRM Calibration Frequency Revision
Attachment 4: List of Regulatory Commitments

cc: Regional Administrator - NRC Region I w/ Attachments 2 and 4
NRC Senior Resident Inspector - LGS "
NRC Project Manager, NRR - LGS "
Director, Bureau of Radiation Protection - Pennsylvania Departmentof Environmental Protection "

ATTACHMENT 2

Limerick Generating Station
Units 1 and 2
Docket Nos. 50-352 and 50-353

License Amendment Request
Response to Request for Additional Information

Revise LPRM Calibration Frequency
(Non-Proprietary Version)

By letter dated October 19, 2007 (Reference 1), Exelon Generation Company, LLC (Exelon) requested changes to the Technical Specifications (TS), Appendix A of Facility Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station (LGS), Units 1 and 2, respectively. The proposed changes would increase the interval between Local Power Range Monitor (LPRM) calibrations from 1000 Effective Full Power Hours (EFPH) to 2000 EFPH.

Subsequently, by letter dated June 20, 2008 (Reference 4), the NRC requested additional information concerning the LGS License Amendment Request (LAR). In particular, the NRC requested that Exelon further discuss the relationship between EFPH and Megawatt Days per short ton (MWD/st), and the impact of applying the LPRM update uncertainty value on the Safety Limit Minimum Critical Power Ratio (MCPR) calculation. The questions identified in Reference 4 were further discussed during subsequent telephone conversations on June 16, 2008 and July 10, 2008, between representatives of the NRC, Exelon, and GNF.

NRC Question 1.)

In Enclosure 1 of the March 14, 2008, supplement, it is stated that 2,000 effective full-power hours (EFPH) is equivalent to ~ (approximately) 2,000 Megawatt Days per short ton (MWD/st). Provide a demonstration that 2,000 EFPH is conservative or equivalent to 2,000 MWD/st or provide a proposed surveillance interval that is bounding with respect to the analysis.

Response

Enclosure 1 of the March 14, 2008, supplemental letter provided the basis for application of an LPRM calibration interval extension of up to 2000 effective full-power hours (EFPH) for the LGS, Units 1 and 2. This LGS LAR requested a change in the Technical Specifications (TS) LPRM calibration interval from 1000 EFPH to 2000 EFPH. Although Enclosure 1 of the March 14, 2008, letter stated that 2000 EFPH is equivalent to ~2000 Megawatt Days per short ton (MWD/st), the basis of the Enclosure 1 assessment was performed with 2000 EFPH and not 2000 MWD/st. Since the basis of the Enclosure 1 assessment and the requested TS change is the same, i.e., 2000 EFPH, then the equivalence statement of ~2000 MWD/st is not applicable to this LAR.

Additionally, GNF has confirmed that the use of the MWD/T exposure unit references in Attachment 1 of the March 26, 2008, supplemental response were the result of an administrative oversight. The exposure unit references in Attachment 1 of the March 26, 2008, letter should have been expressed in terms of EFPH and not MWD/T, which is consistent with the base analysis, the LGS TS, and the NRC-approved General Electric Licensing Topical Report NEDC-32694P-A, *"Power Distribution Uncertainties for Safety Limit MCPR Evaluations,"* dated August 1999.

NRC Question *2.)

In the March 14, 2008, supplement, it is stated that, "Reference 9 also shows [emphasis added] that this has an [[ ]] on the calculated SLMCPR [Safety Limit Minimum Critical Power Ratio] value." Reference 9 was provided by the March 26, 2008, supplement, in which it is stated, "For the Limerick plants, comparison between SLMCPR calculations using the original LPRM [local power range monitor] update uncertainty and the doubled LPRM update uncertainty shows an [[ ]] on the calculated SLMCPR." This is a statement or conclusion. Provide a demonstration or calculations with an explanation that shows this conclusion is valid.

* *Quotations in question (2), including the empty brackets, are taken from the non-proprietary versions of the supplements referenced.*

Response

The effect of a [[ ]] in TIP Calibration Uncertainty is demonstrated by the current cycle SLMCPR sensitivity studies that are presented in the following table. All of the cases are based on 100% rated power. Two flow statepoints are analyzed: one at 100% core flow and the other on the MELLLA boundary. The cases labeled "SLO" show the effect of the increased core flow uncertainty associated with the assumption of the single loop operation.

	Limerick 1 C13	**Limerick 2 C10**
Case	**SLMCPR Change due to TIP Calibration Uncertainty Increase**	
[[		
		]]

[[ ]]
The increased TIP Calibration Uncertainty was found to have [[ ]] on the SLMCPR calculation.

NRC Question 3.)

In the March 26, 2008, supplement, a demonstration was provided regarding doubling of the LPRM uncertainty on the SLMCPR. Is it your intent to apply this doubling to your SLMCPR calculations and reflect this methodology change in your licensing basis when operating with the longer surveillance interval? If so, how will the SLMCPR calculations and the licensing basis documentation be updated?

Response

When using reduced uncertainties, Exelon will double the LPRM update uncertainty value when calculating SLMCPR and the appropriate licensing basis documentation (i.e., Updated Final Safety Analysis Report) will be revised accordingly. The specific commitment is reflected in Attachment 4 of this letter.

ATTACHMENT 3

Limerick Generating Station
Units 1 and 2
Docket Nos. 50-352 and 50-353

License Amendment Request
Response to Request for Additional Information

Revise LPRM Calibration Frequency

Global Nuclear Fuel - Supporting Affidavit for
Response to RAIs for Limerick LPRM Calibration Frequency Revision

Global Nuclear Fuel – Americas

AFFIDAVIT

I, Anthony P. Reese, state as follows:

(1) I am Manager, Reload Design and Analysis, Global Nuclear Fuel–Americas, LLC ("GNF-A"), and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in Enclosure 1 of GNF's letter, JMD-EXN-HH0-08-060, J. Michael Downs to Dave Helker (Exelon Nuclear), entitled "Responses to Reference 2 RAIs 1 and 2 for Limerick LPRM Calibration Frequency Revision", July 11, 2008. GNF proprietary information in Enclosure 1, which is entitled "Responses to RAIs 1 and 2 for Limerick LPRM Calibration Frequency Revision", is identified by a dotted underline inside double square brackets. [[This sentence is an example.{3}]] A "[[" marking at the beginning of a table, figure, or paragraph closed with a "]]" marking at the end of the table, figure or paragraph is used to indicate that the entire content between the double brackets is proprietary. In each case, the superscript notation {3} refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.

(3) In making this application for withholding of proprietary information of which it is the owner or licensee, GNF-A relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GNF-A's competitors without license from GNF-A constitutes a competitive economic advantage over other companies;

b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;

c. Information which reveals aspects of past, present, or future GNF-A customer-funded development plans and programs, resulting in potential products to GNF-A;

d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. above.

(5) To address 10 CFR 2.390 (b) (4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GNF-A, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GNF-A, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or subject to the terms under which it was licensed to GNF-A. Access to such documents within GNF-A is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GNF-A are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information identified in paragraph (2) is classified as proprietary because it contains details of GNF-A's fuel design and licensing methodology.

The development of the methods used in these analyses, along with the testing, development and approval of the supporting methodology was achieved at a significant cost, on the order of several million dollars, to GNF-A or its licensor.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GNF-A's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GNF-A's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical, and NRC review costs comprise a substantial investment of time and money by GNF-A.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GNF-A's competitive advantage will be lost if its competitors are able to use the results of the GNF-A experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GNF-A would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GNF-A of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 11th day of July 2008.

Anthony P. Reese
Manager, Reload Design and Analysis
Global Nuclear Fuel – Americas, LLC

ATTACHMENT 4

Limerick Generating Station
Units 1 and 2
Docket Nos. 50-352 and 50-353

License Amendment Request
Revise LPRM Calibration Frequency

List of Regulatory Commitments

ATTACHMENT 4

LIST OF COMMITMENTS

The following table identifies those actions committed to by Exelon Generation Company (Exelon), LLC, in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments.

COMMITMENT	COMMITTED DATE OR "OUTAGE"	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	PROGRAMMATIC (Yes/No)
Limerick will use an LPRM update uncertainty that is double the original value specified in NEDC-32694P-A, "Power Distribution Uncertainties for Safety Limit MCPR Evaluations," when calculating the Safety Limit Minimum Critical Power Ratio for any cycle with an LPRM calibration interval of 2000 EFPH. The original LPRM update uncertainty as specified in NEDC-32694P-A, "Power Distribution Uncertainties for Safety Limit MCPR Evaluations," can continue to be used when calculating the Safety Limit Minimum Critical Power Ratio if the LPRM calibration interval is limited to 1000 EFPH. The appropriate licensing basis documentation (i.e., Updated Final Safety Analysis Report) will be revised accordingly.	Upon implementation of the Approved License Amendment	No	Yes