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Nuclear

10 CFR 50.90

February 13, 2004

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Limerick Generating Station, Unit 1  
Facility Operating License No. NPF-39  
NRC Docket No. 50-352

Subject: License Amendment Request: AR A1443067  
Response to Request for Additional Information Concerning Safety Limit \*Minimum  
Critical Power Ratio (SLMCPR) Change

Reference: Letter from M. P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear  
Regulatory Commission, dated December 22, 2003

In the referenced letter, Exelon Generation Company, LLC (Exelon) requested an amendment to the Technical Specifications (TS), Appendix A of Operating License No. NPF-39 for Limerick Generating Station (LGS), Unit 1. This proposed change will revise Technical Specification (TS) Section 2.1. This Section will be revised to incorporate revised Safety Limit Minimum Critical Power Ratios (SLMCPRs) due to the cycle specific analysis performed by Global Nuclear Fuel for LGS, Unit 1, Cycle 11.

The purpose of this letter is to provide additional information (Attachment 1) in response to NRC's request for additional information as discussed in conference calls on February 4, 2004 and February 12, 2004. Attachment 1 contains information proprietary to Global Nuclear Fuels. Accordingly, it is requested that Attachment 1 be withheld from public disclosure. An affidavit supporting this request is contained in Attachment 1. Attachment 2 provides a non-proprietary version.

Additionally, there are no commitments contained within this letter.  
If you have any questions or require additional information, please contact Tom Loomis at (610) 765-5510.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

02-16-2004

Executed on

Michael P. Gallagher

Michael P. Gallagher

Director, Licensing and Regulatory Affairs

Attachments: 1-Proprietary Global Nuclear Fuels Letter  
2-Non-proprietary Version of Global Nuclear Fuels Letter

cc: H. J. Miller, Administrator, Region I, USNRC  
A. L. Burritt, USNRC Senior Resident Inspector, LGS  
S. Wall, Senior Project Manager, USNRC  
R. R. Janati, Commonwealth of Pennsylvania

w/Attachment  
w/Attachment  
w/Attachment  
w/o Attachment

APOI

**ATTACHMENT 1**

**LIMERICK GENERATING STATION  
UNIT 1**

**DOCKET NO. 50-352**

**LICENSE NO. NPF-39**

**LICENSE AMENDMENT REQUEST: AR A1443067**

**Affidavit and Proprietary Information**

**Affidavit**

**I, Jens G. M. Andersen, state as follows:**

- (1) I am Fellow and project manager, TRACG Development, Global Nuclear Fuel – Americas, L.L.C. (“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 the attachment, “Additional Information Regarding the Request for Additional Information - SLMCPR Limerick 1 Cycle 11 Docket 50-352,” dated February 12, 2004. GNF proprietary information is indicated by enclosing it in double brackets. In each case, the superscript notation <sup>(3)</sup> 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 2.790(a)(4) for “trade secrets and commercial or financial information obtained from a person and privileged or confidential” (Exemption 4). The material for which exemption from disclosure is here sought is all “confidential commercial information,” and some portions 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 cost or price information, production capacities, budget levels, or commercial strategies of GNF-A, its customers, or its suppliers;
  - d. Information which reveals aspects of past, present, or future GNF-A customer-funded development plans and programs, of potential commercial value to GNF-A;
  - e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

Affidavit

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 the 10 CFR 2.790 (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. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in (6) and (7) following. 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.
- (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 fuel design and licensing methodology 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 or its licensor.

Affidavit

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 at Wilmington, North Carolina, this 12th day of February, 2004.



Jens G. M. Andersen

Global Nuclear Fuel – Americas, LLC

**ATTACHMENT 2**

**LIMERICK GENERATING STATION  
UNIT 1**

**DOCKET NO. 50-352**

**LICENSE NO. NPF-39**

**LICENSE AMENDMENT REQUEST: AR A1443067**

**Non-Proprietary Information**

**Questions:**

1. Table 1 shows that the calculated safety limit MCPR value for Cycle 11 is lower than that for Cycle 10, however, based on the core MCPR distribution and bundle R-factor distribution information it would suggest that the calculated SLMCPR value should be higher for Cycle 11 than for Cycle 10. Please provide clarification for this result.
2. There is no apparent penalty for the double hump power shapes shown in Table 2. Provide the rationale of why no penalty is needed in the proposed SLMCPR values.
3. Provide identification for the number of each different bundle and the fuel cycle in which it was loaded in Figures 1 and 2.

**Responses:**

1. Question 1 was resolved during a February 4, 2004 telephone conversation.
2. There is no apparent penalty for double hump power shapes shown in Table 2 as the evaluation included the standard discriminator  $[[^{(3)}]]$  in the Monte Carlo calculation. This discriminator applies a penalty to the SLMCPR calculation if a double hump power shape is found. There were no double hump power shapes detected in any of the SLMCPR Monte Carlo calculations for Limerick 1 Cycle 11. Therefore, no double hump power shape penalty applies.

The verification process used in preparing the response to this question disclosed a misstatement in the original SLMCPR letter. The sentence on page 5 of the SLMCPR letter which reads " $[[^{(3)}]]$ "

" $[[^{(3)}]]$ " is in error. In fact, there were no double hump power shapes found, and the small penalty that was attributed to the use of a more limiting discriminator was not present, as the more limiting discriminator was not used in the analysis. The calculated SLMCPR values in Table 2 are not impacted and they are correct.

**Attachment                      Additional Information Regarding the                      February 12, 2004**  
**Request for Additional Information - SLMCPR Limerick 1 Cycle 11 Docket 50-352**

3. See the tables below for core inventories in Cycles 10 and 11 :

**Cycle 10:**

Fuel Type	Bundle Name	Number of Bundles in Core	Cycle Loaded
A	GE13-P9CTB417-13GZ-100T-146-T	112	9
B	GE13-P9CTB417-11GZ-100T-146-T	88	9
C	GE13-P9CTB417-13GZ-100T-146-T	48	9
D	GE13-P9CTB417-11GZ-100T-146-T	16	9
E	GE14-P10CNAB417-7G8.0/8G7.0-100T-150-T-2527	126	10
F	GE14-P10CNAB417-13GZ-100T-150-T-2528	80	10
G	GE14-P10CNAB417-7G8.0/8G7.0-100T-150-T-2527	24	10
H	GE14-P10CNAB417-13GZ-100T-150-T-2528	48	10
I	GE14-P10CNAB417-7G8.0/8G7.0-80U45R-150-T-2531	2	10
J	GE13-P9CTB412-13GZ-100T-146-T	188	8
K	GE13-P9CTB413-14GZ-100T-146-T	32	8

**Cycle 11 :**

Fuel Type	Bundle Name	Number of Bundles in Core	Cycle Loaded
A	GE14-P10CNAB417-15GZ-100T-150-T6-2594	160	11
B	GE14-P10CNAB414-14GZ-100T-150-T6-2690	104	11
C	GE13-P9CTB417-13GZ-100T-146-T6-3833	100	9
D	GE13-P9CTB417-11GZ-100T-146-T6-3834	56	9
E	GE13-P9CTB417-13GZ-100T-146-T6-3833	48	9
F	GE13-P9CTB417-11GZ-100T-146-T6-3834	16	9
G	GE14-P10CNAB417-7G8.0/8G7.0-100T-150-T6-2529	126	10
H	GE14-P10CNAB417-13GZ-100T-150-T6-2530	80	10
I	GE14-P10CNAB417-7G8.0/8G7.0-100T-150-T6-2529	24	10
J	GE14-P10CNAB417-13GZ-100T-150-T6-2530	48	10
K	GE14-P10CNAB417-7G8.0/8G7.0-80U45R-150-T6-2532	2	10