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10 CFR 50.90

March 6, 2001

Docket No. 50-353

License No. NPF-85

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

Subject: Limerick Generating Station, Unit 2
Technical Specifications Change Request No. 01-03-2
Response to Request for Additional Information

Reference: 1) Letter from J. A. Hutton (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, dated February 1, 2001

2) Letter from C. Gratton (U. S. Nuclear Regulatory Commission) to J. A. Hutton (Exelon Generation Company, LLC), dated March 2, 2001

Dear Sir/Madam:

In the Reference 1 letter, Exelon Generation Company, LLC, submitted Technical Specifications Change Request (TSCR) No. 01-03-2 requesting a change to the Limerick Generating Station (LGS), Unit 2 Facility Operating License. This proposed change will revise Technical Specifications (TS) 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 (Formerly General Electric Nuclear Energy) for LGS, Unit 2, Cycle 7, which will include the use of the GE-14 fuel product line. In response to your request for additional information (Reference 2), Attachment 1 contains additional information.

Attachment 1 to this letter contains information proprietary to Global Nuclear Fuel. Global Nuclear Fuel requests that the document be withheld from public disclosure in accordance with 10 CFR 2.790(a)(4). An affidavit supporting this request is also contained in Attachment 1. Attachment 2 contains a non-proprietary version of the Global Nuclear Fuel document.

A001

If you have any questions, please do not hesitate to contact us.

Very truly yours,

James A. Hutton
Director - Licensing

Enclosures: Attachment 1, Attachment 2

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

COMMONWEALTH OF PENNSYLVANIA:

: ss.

COUNTY OF CHESTER :

J. J. Hagan, being first duly sworn, deposes and says:

That he is Senior Vice President of Exelon Generation Company, LLC; the Applicant herein; that he has read the attached response to the request for additional information concerning Safety Limit Minimum Critical Power Ratios, for Limerick Generating Station Unit 2, Facility Operating License No. NPF-85, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

Senior Vice President

Subscribed and sworn to
before me this 6th day
of March 2001.

Notary Public

Notarial Seal
Carol A. Walton, Notary Public
Tredyffrin Twp., Chester County
My Commission Expires May 28, 2002
Member, Pennsylvania Association of Notaries

ATTACHMENT 2

LIMERICK GENERATING STATION
UNIT 2

Docket No. 50-353

License No. NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST

Non-Proprietary Version

Supporting Information - 3 pages

Responses to NRC RAIs regarding Requested Reduction in Tech. Spec. SLMCPR for Limerick-2, Cycle 7

QUESTION 1

Provide the fuel types and numbers of assemblies used in Limerick Cycle 6 and Cycle7 operation and identify whether they are fresh or irradiated fuel (once- or twice- burned, etc.). Also, describe the impact on the SLMCPR calculation given the different fuel loading patterns for Cycle 6 and Cycle 7.

RESPONSE 1

The tables below correspond to Figures 1 and 2 of Attachment 4 ("Additional Information Regarding the Cycle Specific SLMCPR for Limerick Unit 2 Cycle 7"). These tables indicate the number of bundles of each fuel type. The cycle that the fuel type was loaded is indicated so it is evident whether the fuel is exposed or fresh. For example, in Figure 2 for Cycle 7 the fresh fuel is indicated as having been loaded in cycle 7 whereas the once-burned fuel was loaded in Cycle 6. The limiting SLMCPR value occurs near the end of the cycle for both Cycles 6 and 7; consequently, the SLMCPR is dominated only by the fuel that was freshly loaded at the beginning of the cycle. The impact that the core loading has on the calculated SLMPCR is quantified [[ ]] as addressed in the response to question 2.

Fuel Type			
A=GE13-P9CTB412-13GZ1-100T-146-T	(Cycle 6, 208)	F=P8CIB176-4GZ-100M-150-T	(Cycle 6, 8)
B=P8CIB219-4GZ-80M-150-T	(Cycle 6, 28)	G=GE11-P9CUB354-12GZ2-100M-146-T	(Cycle 6, 44)
C=P8CIB176-4GZ-80M-150-T	(Cycle 6, 16)	H=GE11-P9CUB399-14GZ-100T-146-T	(Cycle 4, 60)
D=GE13-P9CTB412-13GZ2-100T-146-T	(Cycle 6, 52)	I=GE13-P9CTB416-15GZ-100T-146-T	(Cycle 5, 284)
E=P8CIB219-4GZ-100M-150-T	(Cycle 6, 40)	J=P8CIB219-4GZ-80M-150-T	(Cycle 5, 24)

Figure 1 Reference Core Loading Pattern – Cycle 6

Fuel Type			
A=GE13-P9CTB412-13GZ1-100T-146-T	(Cycle 6, 208)	H=GE14-P10CNAB403-16GZ-100T-150-T-2421	(Cycle 7, 150)
B=P8CIB219-4GZ-80M-150-T	(Cycle 6, 27)	I=GE14-P10CNAB403-16GZ-100T-150-T-2422	(Cycle 7, 24)
C=P8CIB176-4GZ-80M-150-T	(Cycle 6, 16)	J=GE14-P10CNAB403-16GZ-100T-150-T-2421	(Cycle 7, 44)
D=GE13-P9CTB412-13GZ2-100T-146-T	(Cycle 6, 52)	K=GE14-P10CNAB403-16GZ-100T-150-T-4002	(Cycle 7, 2)
E=P8CIB219-4GZ-100M-150-T	(Cycle 6, 40)	L=P8CIB219-4GZ-80M-150-T	(Cycle 7, 1)
F=P8CIB176-4GZ-100M-150-T	(Cycle 6, 8)	M=GE13-P9CTB416-15GZ-100T-146-T	(Cycle 5, 144)
G=GE14-P10CNAB403-16GZ-100T-150-T-2422	(Cycle 7, 48)		

Figure 2 Reference Core Loading Pattern – Cycle 7

Responses to NRC RAIs regarding Requested Reduction in Tech. Spec. SLMCPR for Limerick-2, Cycle 7

QUESTION 2

Based on the information provided in Table 1 of Attachment 4, of your application dated February 1, 2001, the same General Electric Boiling Water Reactor Thermal Analysis Basis (GETAB) power distribution uncertainty and original versus revised nonpower distribution uncertainty are used for the input to the SLMCPR calculations for Cycle 6 and Cycle 7, respectively. However, the results of the calculations show that there is a decrease of 0.03 for the two-recirculation loop operation and single-recirculation loop operation for Cycle 7. It appears that the 0.03 decrease due to nonpower distribution uncertainty is too high. Provide the calculation methods and identify the contributors of this large decrease. Also, justify that the proposed new SLMCPR for Cycle 7 operation is conservative with respect to the method stated in NEDC-32601P-A.

RESPONSE 2

The revised non-power distribution uncertainties are those required by the NRC SER identified in Reference 1 of Attachment 4 ("Additional Information Regarding the Cycle Specific SLMCPR for Limerick Unit 2 Cycle 7"). Further explanation is provided in the response given to question 2 under "Supporting Information" of that attachment. The change in the non-power distribution uncertainties from the "original" to the "revised" has negligible impact on the calculated SLMCPR. The reduction of [[ ]] in the calculated SLMCPR between cycle 7 and cycle 6 is **not** due to the non-power distribution uncertainties.

Although the SLMCPR is dominated by the power distribution uncertainties, this is **not** the reason for the reduction in SLMCPR between Cycle 7 and Cycle 6. The GETAB power distribution uncertainties were used in the Limerick 2 SLMCPR evaluations for **both** Cycle 6 and Cycle 7 (as indicated previously in Table 1 of Attachment 4).

The reason that the Cycle 7 SLMCPR value is lower than the Cycle 6 value is due to the much more peaked core MCPR distribution for Cycle 7 relative to Cycle 6. This effect is more than enough to offset the effect of the flatter bundle R-factor distribution for Cycle 7. The net impact is indicated by [[

(1)

]] the SLMCPR value for Cycle 7 is expected nominally to be 0.0268 lower than the SLMCPR value calculated for Cycle 6.[[

(2)

]]The SLMCPR values from the NRC-approved Monte Carlo methodology are 1.12 (Cycle 6) and 1.09 (Cycle 7) indicating an actual decrease of 0.03. [[

]] Based on the uncertainty associated with these values one can conclude that the calculated GETAB SLMCPR value of 1.09 for Limerick-2, Cycle 7 is within the range of values that one may reasonably expect.

The proposed 1.09 SLMCPR for Limerick-2, Cycle 7 was calculated in compliance with the NRC-approved plant/cycle specific SLMCPR methodology documented in NEDC-32601P-A. The revised non-power distribution uncertainties documented in Table 2.1 of NEDC-32601P-A were applied. For the power distribution uncertainties, the more conservative GETAB values for "TIP Reading and Bundle Power" were applied.

ATTACHMENT 1

LIMERICK GENERATING STATION
UNIT 2

Docket No. 50-353

License No. NPF-85

TECHNICAL SPECIFICATIONS CHANGE REQUEST
No. 01-03-2

Affidavit and Response to Request of Additional Information

Supporting Information - 6 Pages

Global Nuclear Fuel
A Joint Venture of GE, Toshiba, & Hitachi

Affidavit

I, Charles M. Vaughan, being duly sworn, depose and state as follows:

(1) I am Manager, Facility Licensing, 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.

1. The information sought to be withheld is contained in the attachment, "Responses to NRC RAIs regarding Requested Reduction in Tech. Spec. SLMCPR for Limerick-2, Cycle 7".

(2) 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).

(3) 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.

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) 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.

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.

Affidavit

State of North Carolina)
County of New Hanover) SS:

Charles M. Vaughan, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at Wilmington, North Carolina, this 5 day of March, 2001

Charles M. Vaughan
Global Nuclear Fuel – Americas, LLC

ROSA L. DAVIS NOTARY PUBLIC NEW HANOVER COUNTY, NC

Subscribed and sworn before me this 5 day of March, 2001

ROSA L. DAVIS NOTARY PUBLIC NEW HANOVER COUNTY, NC

Notary Public, State of North Carolina

My Commission Expires 12/4/2002