

RS-04-002

January 7, 2004

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001Quad Cities Nuclear Power Station, Unit 2
Facility Operating License No. DPR-30
NRC Docket No. 50-265Subject: Supplemental Information for Technical Specifications Change for
Minimum Critical Power Ratio Safety Limit

- References: (1) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Request for Technical Specifications Change for Minimum Critical Power Ratio Safety Limit," dated November 14, 2003
- (2) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Supplemental Information for Technical Specifications Change for Minimum Critical Power Ratio Safety Limit," dated December 23, 2003

In Reference 1, Exelon Generation Company, LLC (EGC) submitted a request for a change to the Technical Specifications (TS) for Quad Cities Nuclear Power Station (QCNPS), Unit 2. The proposed change revises the values of the Safety Limit for the Minimum Critical Power Ratio (SLM CPR) in TS Section 2.1.1, "Reactor Core SLs," for Unit 2, Cycle 18, for both two loop operation and single loop operation to 1.09 and 1.10, respectively.

On December 18, 2003, Global Nuclear Fuel (GNF) provided EGC with revised calculations used in the determination of the SLM CPR limits for QCNPS Unit 2, Cycle 18. These changes occurred following a review of the previously calculated results. EGC submitted copies of these documents as Attachments 1 and 2 of Reference 2.

Further, on December 18, 2003, the NRC requested additional information to support the review of Reference 1. The attachments to this letter provide the requested information. Some of the information contained in Attachment 1 of this letter is classified as proprietary to our fuel supplier, GNF, and is identified as text contained between opening double brackets ([I]) and closing double brackets ([J]). The proprietary information is of the type that GNF maintains in confidence and withholds from public disclosure. It has been handled and classified as proprietary as supported by the affidavit in Attachment 2.

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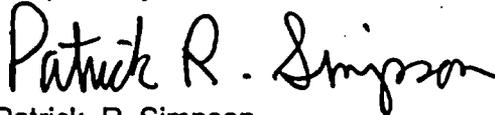
EGC hereby requests that this information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.790, "Public inspections, exemptions, requests for withholding," paragraph (a)(4), and 10 CFR 9.17, "Agency records exempt from public disclosure," paragraph (a)(4). Attachment 2 provides a redacted, non-proprietary version of the information in Attachment 1.

EGC has reviewed the information supporting a finding of no significant hazards consideration that was previously provided to the NRC in Attachment 1 of Reference 1. The supplemental information provided in this submittal does not affect the bases for concluding that the proposed TS change does not involve a significant hazards consideration.

Should you have any questions related to this letter, please contact Mr. Thomas G. Roddey at (630) 657-2811.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 7th day of January 2004.

Respectfully,



Patrick R. Simpson
Manager - Licensing

Attachments:

1. Additional Information Regarding the Cycle Specific SLMCPR for Quad Cities Unit 2 Cycle 18 (GNF Proprietary Version)
2. Affidavit and Additional Information Regarding the Cycle Specific SLMCPR for Quad Cities Unit 2 Cycle 18 (GNF Non-Proprietary Version)

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT 2

**Affidavit and Additional Information Regarding the Cycle Specific SLMCPR for
Quad Cities Unit 2 Cycle 18
(GNF Non-Proprietary Version)**

Affidavit

I, Margaret E. Harding, state as follows:

- (1) I am Manager, Fuel Engineering Services, 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, “Quad Cities Nuclear Power Station, Unit 2 Request for Additional Information, Safety Limit Minimum Critical Power Ratio Amendment Request”. GNF proprietary information is indicated by enclosing it in double brackets. 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 2.790(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.

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

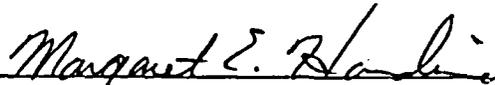
The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

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 6th day of January, 2004.


Margaret E. Harding
Global Nuclear Fuel – Americas, LLC

ATTACHMENT 2

Affidavit and Additional Information Regarding the Cycle Specific SLMCPR for Quad Cities Unit 2 Cycle 18 (GNF Non-Proprietary Version)

Quad Cities Nuclear Power Station, Unit 2
Request for Additional Information
Safety Limit Minimum Critical Power Ratio Amendment Request

- 2. Please identify the design record file to support this technical specification amendment, and provide a summary table or figure to show the number of rods that might experience boiling transition as a function of the nominal MCPR.

Response:

The Global Nuclear Fuel – Americas (GNF) design record file for the Safety Limit Minimum Critical Power Ratio (SLMCPR) letter dated October 13, 2003, (i.e., Attachment 4 of Reference 1) is 0000-0022-0063, and 0000-0024-0882 for the letter dated December 18, 2003 (i.e., Attachment 1 of Reference 2). The table below shows the percentages of rods expected to avoid boiling transition as a function of Minimum Critical Power Ratio (MCPR) based on results from the Monte Carlo calculation for the limiting condition in Cycle 18.

Statistical Results

<u>MCPR</u>	<u>Percentage of Rods Expected to Avoid Boiling Transition</u>
1.086	99.903
1.083	99.893
1.085	99.901

- 2. Provide justification that the proposed SLMCPR reduction is conservative while the effective total bundle power uncertainty in Column 2 is higher than that in Column 1 shown in Table 2 of Attachment 4.

Response:

The attachment dated October 13, 2003, indicated results from an earlier evaluation for Cycle 17 using the GETAB methodology. The results from the most recent evaluation for Cycle 17 are contained in the attachment dated December 18, 2003. As indicated in column 2 of Table 2 of the updated attachment, the power distribution uncertainties are consistent with the Revised Methodology of NEDC-32601P-A for both Cycles 17 and 18. Both cycles used a higher plant-specific effective bundle power uncertainty of 5.0%, which is based on the use of POWERPLEX for core monitoring. The calculated reductions in SLMCPRs from Cycle 17 to Cycle 18 are due to the following:

- 1). Top-peaked power shapes were present in Cycle 17, however top-peaked power shapes were not present in Cycle 18. This reduces the calculated SLMCPR by [[]] for Cycle 18.

ATTACHMENT 2

Affidavit and Additional Information Regarding the Cycle Specific SLMCPR for Quad Cities Unit 2 Cycle 18 (GNF Non-Proprietary Version)

2). [[]]

The expected net reduction in calculated SLMCPR for Cycle 18 relative to Cycle 17 is 0.0225. The proposed SLMCPR reduction of 0.02 is appropriate.

3. Provide clarification that no fuel bundles within 0.05 of the minimum MCPR bundle have top peaked power shapes at EOC based on the definition of a top-peaked power shape provided in Attachment 4 of the submittal.

Response:

The concluding sentence of the paragraph at the top of page 2 of the attachment dated December 18, 2003, indicates that [[]]