



Charles R. Pierce
Regulatory Affairs Director

40 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242
205 992 7872 tel
205 992 7601 fax

crpierce@southernco.com

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Docket Nos.: 50-366

NL-16-2457

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant – Unit 2
Supplemental Information Regarding Proposed Safety Limit Minimum Critical Power Ratio
(SLMCPR) License Amendment

Ladies and Gentlemen:

By application dated August 29, 2016, Southern Nuclear Operating Company (SNC), the licensee for Edwin I. Hatch Nuclear Plant (HNP) Unit 2, submitted an amendment (ADAMS Accession No. ML16245A257) that requested changes to Technical Specifications Section 2.1.1.2, "Reactor Core SLs." The amendment proposed revising the cycle-specific safety limit minimum critical power ratio (SLMCPR) for the upcoming Cycle 25. The U. S. Nuclear Regulatory Commission (NRC) issued a request for additional information (RAI) on November 2, 2016. The enclosures to this letter provide the additional information for the NRC staff to complete its safety evaluation of the application.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at 205.992.7369.

Mr. C. R. Pierce states he is the Regulatory Affairs Director for Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and, to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

A handwritten signature in black ink that reads "C. R. Pierce".

C. R. Pierce
Director
Regulatory Affairs

CRP/lac

Sworn to and subscribed before me this 18 day of November, 2016.

A handwritten signature in black ink that reads "Laura L. O'Connell".
Notary Public

My commission expires: 10-8-2017.

ABO1
NRK

- Enclosures: 1) Response to NRC RAI for Edwin I. Hatch Unit 2, Cycle 25 SLMCPR submittal – Proprietary Information.
2) Response to NRC RAI for Edwin I. Hatch, Unit 2, Cycle 25 SLMCPR submittal – Non-Proprietary Information.
3) Affidavit for Enclosure 1.

cc: Southern Nuclear Operating Company

Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. D. R. Vineyard, Vice President – Hatch
Mr. M. D. Meier, Vice President – Regulatory Affairs
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. B. J. Adams, Vice President – Engineering
Mr. G. L. Johnson, Regulatory Affairs Manager – Hatch
RType: CHA02.004

U. S. Nuclear Regulatory Commission

Ms. C. Haney, Regional Administrator
Mr. M. D. Orenak, NRR Project Manager – Hatch
Mr. D. H. Hardage, Senior Resident Inspector – Hatch

State of Georgia

Mr. R.E. Dunn, Director – Environmental Protection Division

Edwin I. Hatch Nuclear Plant – Unit 2
Supplemental Information Regarding Proposed Safety Limit Minimum
Critical Power Ratio (SLMCPR) License Amendment

Enclosures

ENCLOSURE 2

VSP-SNC-HV1-16-082 R1

Revised Response to NRC RAI for Hatch 2 Cycle 25 SLMCPR Submittal

Non-Proprietary Information – Class I (Public)

INFORMATION NOTICE

This is a non-proprietary version of VSP-SNC-HV1-16-082 R1 Enclosure 1, which has the proprietary information removed. Portions of the document that have been removed are indicated by white space inside an open and closed bracket as shown here [[]].

RAI 1

The SLMCPR shall have appropriate margin to reasonably protect the integrity of fuel to meet the requirements of Title 10 of the *Code of Federal Regulations*, Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants, Criterion 10, "Reactor Design." Table 3 of Global Nuclear Fuel-Americas, LLC report GNF-003N7688-R1-P, "GNF Additional Information Regarding the Requested Changes to the Technical Specification SLMCPR, Hatch 2 Cycle 25," (non-public, proprietary) showed TS single-loop operation SLMCPR to be 1.13, which is rounded from the [[]].

Please provide justification for the apparent non-conservative rounding from [[]] to 1.13, or demonstrate that use of this rounding convention is not significant with respect to the margin of safety.

GNF Response

Per the approved methodology (Reference 1), limiting rod patterns used in the determination of the SLMCPR are sufficiently conservative to ensure that the use of standard rounding practices, to two places past the decimal point, is not significant with respect to the margin of safety. The degree of rounding, from [[]] to 1.13, is therefore less than the 0.005 level of significance established as part of the approved methodology.

Furthermore, the Appendix C RAI 17 response (page C-48) of Reference 2 discusses the 0.005 level of significance threshold in the context of the inherent variability in the Monte Carlo process. Quoted from the RAI response; "This threshold was chosen to correspond to the inherent variability in the Monte Carlo process for determining the safety limit. It is also consistent with the accepted practice of rounding and reporting SLMCPR values to two places past the decimal point. By definition, a change in a statepoint condition that goes into the evaluation of a SLMCPR is not significant unless it results in an increase in the calculated SLMCPR by +0.005."

References

1. GE Nuclear Energy, "Methodology and Uncertainties for Safety Limit MCPR Evaluations," NEDC-32601P-A, Revision 0, August 1999.
2. GE Hitachi Nuclear Energy, "Applicability of GE Methods to Expanded Operating Domains," NEDC-33173P-A, Revision 4, November 2012.

ENCLOSURE 3

VSP-SNC-HV1-16-082 R1

Affidavit for Enclosure 1

Global Nuclear Fuel – Americas
AFFIDAVIT

I, Brian R. Moore, state as follows:

- (1) I am Engineering Manager, Core & Fuel Engineering, 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, VSP-SNC-HV1-16-082 R1, V. Perry (GNF-A) to B. Carmichael (Southern Nuclear Operating Company), entitled "Revised GNF Response to NRC RAI for Hatch 2 Cycle 25 SLMCPR Submittal," dated November 17, 2016. GNF-A proprietary information in Enclosure 1, which is entitled "Revised Response to NRC RAI for Hatch 2 Cycle 25 SLMCPR Submittal," is identified by a dotted underline inside double square brackets. [[This sentence is an example.^{3}]] GNF proprietary information in some tables is identified with double square brackets before and after the object. 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, 975 F2d 871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F2d 1280 (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.
- (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 this methodology, along with the testing, development and approval was achieved at a significant cost to GNF-A.

The development of the fuel design and licensing methodology along with the interpretation and application of the analytical results is derived from an extensive experience database that constitutes a major GNF-A asset.

- (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.

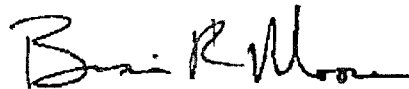
The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

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 is true and correct.

Executed on this 17th day of November 2016.

A handwritten signature in black ink, appearing to read "Brian R. Moore". The signature is fluid and cursive, with the first name "Brian" and last name "Moore" clearly distinguishable.

Brian R. Moore
Engineering Manager, Core & Fuel Engineering
Global Nuclear Fuel – Americas, LLC
3901 Castle Hayne Road
Wilmington, NC 28401
Brian.Moore@ge.com