Charles R. Pierce
Regulatory Affairs Director

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242

Tel 205.992.7872
Fax 205.992.7601

~~Proprietary Information~~
~~Withhold per 10 CFR 2.390~~

SOUTHERN COMPANY

Docket Nos.: 50-366 NL-14-1091

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

Edwin I. Hatch Nuclear Plant – Unit 2
License Amendment Request Concerning Safety Limit
Minimum Critical Power Ratio

References:
1. GNF Additional Information Regarding the Requested Changes to the Technical Specification SLMCPR, Proprietary Version, GNF-001N6296-R1-P, dated July 2014
2. GNF Additional Information Regarding the Requested Changes to the Technical Specification SLMCPR, Non-Proprietary Version, GNF-001N6296-R1-NP, dated July 2014

Ladies and Gentlemen:

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC), hereby proposes to amend the Edwin I. Hatch Nuclear Power Plant (HNP) Unit 2 Facility Operating License (FOL), NPF-5, by incorporating the attached proposed change in the Technical Specifications (TS). This proposed change provides revised values for the Safety Limit Minimum Critical Power Ratios (SLMCPRs) for both single and dual recirculation loop operation.

Attachment 1 to this letter contains the application for amendment, the determination of no significant hazards consideration, and the environmental impact assessment. Attachment 2 provides the marked-up version of the current TS pages. Attachment 3 contains the re-typed TS pages. Enclosure 1 is a summary of the technical bases for the SLMCPR values and is considered proprietary information by Global Nuclear Fuels - Americas, LLC (GNF). In accordance with 10 CFR 2.390(b)(1), an affidavit attesting to the proprietary nature of the enclosed information and requesting withholding from public disclosure is included with Enclosure 1. Enclosure 2 is the same GNF information with the proprietary portions removed, and is provided for public disclosure.

SNC requests approval of the proposed license amendment by February 8, 2015, with the amendment being implemented within 45 days thereafter to coincide with start-up from our refueling outage.

Enclosure 1 to this letter contains Proprietary Information that should be withheld from public disclosure per 10 CFR 2.390. When separated from Enclosure 1 there are no withholding criteria.

A001
NRR

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 Regulatory Affairs Director of 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,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/RMJ/

Sworn to and subscribed before me this 8th *day of* August, *2014.*

Notary Public

My commission expires: 1-2-2018

Attachments:
1. Description and Assessment
2. Marked Technical Specification Pages
3. Clean Typed Technical Specification Pages

Enclosures:
1. Proprietary GNF Report GNF-001N6296-R1-P and GNF affidavit
2. Non-Proprietary GNF Report GNF-001N6296-R1-NP

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. B. L. Ivey, Vice President – Regulatory Affairs
Mr. D. R. Madison, Vice President – Vogtle
Mr. T. E. Tynan, 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
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Senior Project Manager – Hatch
Mr. D. H. Hardage, Senior Resident Inspector – Hatch

State of Georgia
Mr. J. H. Turner, Environmental Director Protection Division

Enclosure 1 to this letter contains Proprietary Information that should be withheld from public disclosure per 10 CFR 2.390. When separated from Enclosure 1 there are no withholding criteria.

Edwin I. Hatch Nuclear Plant – Units 2
License Amendment Request Concerning Safety Limit Minimum Critical Power Ratio

Attachment 1

Description and Assessment

Description of the Proposed Change

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC), proposes to amend the Edwin I. Hatch Nuclear Power Plant (HNP) Unit 2 Technical Specifications (TS) Section 2.1.1.2, Safety Limit Minimum Critical Power Ratio (SLMCPR). The proposed changes to the Technical Specifications are as follows:

Page 2.0-1, Specification 2.1.1.2 – Replace the listed SLMCPR values of 1.08 for two recirculation loop operation (TLO) and 1.10 for single recirculation loop operation (SLO) with new values of 1.09 and 1.12, respectively.

Reason for the Proposed Change

The current SLMCPR values for TLO and SLO contained in the HNP Unit 2 Technical Specifications (1.08 and 1.10, respectively) are not applicable for the upcoming operating cycle due to a change in reload fuel design. Based upon the fuel and core loading, the cycle-specific SLMCPR values were determined to be 1.09 for TLO and 1.12 for SLO.

Safety Assessment of Proposed Change

The purpose of the SLMCPR is to assure that the specified acceptable fuel design limit for fuel rod overheating is not violated during normal operation or design-basis anticipated operational occurrences (transients). Since the parameters that result in fuel rod overheating are not directly observable during reactor operation, the thermal and hydraulic conditions that result in the onset of transition boiling have been used to mark the beginning of the region in which fuel cladding damage could occur. Although it is recognized that the onset of transition boiling would not result in damage to BWR fuel rod cladding, the critical power at which boiling transition is calculated to occur has been adopted as a convenient and conservative limit. However, uncertainties in monitoring the core operating state and in the procedures used to calculate the critical power result in an uncertainty in the value of the critical power. Therefore, the SLMCPR is defined as the critical power ratio in the limiting fuel assembly (with margin) such that, if the limit is not violated, 99.9% of the fuel rods will not be susceptible to boiling transition during normal operation or the most limiting postulated design-basis transient event.

The revised SLMCPR for HNP Unit 2 was determined using cycle-specific fuel and core parameters, with NRC-approved methods of evaluation, as discussed in Enclosure 1 (GNF Additional Information Regarding the Requested Changes to the Technical Specification SLMCPR) and Enclosure 2 (a non-proprietary version of GNF's proprietary document). Analysis of the limiting transients provides the allowed operating conditions in terms of MCPR during the fuel cycle such that if a design-basis transient event were to occur, the MCPR would not be less than the SLMCPR. The SLMCPR value for SLO is greater than the TLO value to account for the increased core flow and random effective TIP reading uncertainties.

No plant hardware or operational changes are required with this proposed change.

Determination Of No Significant Hazards Considerations

Pursuant to 10 CFR 50.92, SNC has reviewed the proposed change and concludes that the change does not involve a significant hazards consideration since the proposed change satisfies the criteria in 10 CFR 50.92(c). These criteria require that operation of the facility in accordance with the proposed amendment will not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in the margin of safety. The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

The proposed change does not involve a significant hazards consideration because:

1. The operation of HNP Unit 2 in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The Safety Limit Minimum Critical Power Ratio (SLMCPR) ensures that, 99.9% of the fuel rods in the core will not be susceptible to boiling transition during normal operation or the most limiting postulated design-basis transient event. The new SLMCPR values preserve the existing margin to the onset of transition boiling; therefore, the probability of fuel damage is not increased as a result of this proposed change. The determination of the revised HNP Unit 2 SLMCPRs has been performed using NRC-approved methods of evaluation. These plant-specific calculations are performed each operating cycle and may require changes for future cycles. The revised SLMCPR values do not change the method of operating the plant; therefore, they have no effect on the probability of an accident initiating event or transient.

   Based on the above, SNC has concluded that the proposed change will not result in a significant increase in the probability or consequences of an accident previously evaluated.

2. The operation of HNP Unit 2 in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The proposed changes result only from a specific analysis for the HNP Unit 2 core reload design. These changes do not involve any new or different methods for operating the facility. No new initiating events or transients result from these changes.

Based on the above, SNC has concluded that the proposed change will not create the possibility of a new or different kind of accident from those previously evaluated.

3. The operation of HNP Unit 2 in accordance with the proposed amendment will not involve a significant reduction in the margin of safety.

   The new SLMCPRs have been calculated using NRC-approved methods of evaluation with plant and cycle-specific input values for the fuel and core design for the upcoming cycle of operation. The SLMCPR values ensure that 99.9% of the fuel rods in the core will not be susceptible to boiling transition during normal operation or the most limiting postulated design-basis transient event. The operating MCPR limit is set appropriately above the safety limit value to ensure adequate margin when the cycle-specific transients are evaluated. Accordingly, the margin of safety is maintained with the revised values.

   As a result, SNC has determined that the proposed change will not result in a significant reduction in the margin of safety.

   On the basis of the above, SNC has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92(c), in that it: (1) does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) does not involve a significant reduction in the margin of safety.

ENVIRONMENTAL IMPACT

The proposed Technical Specification changes were reviewed against the criteria of 10 CFR 51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, a significant increase in the amounts of effluents that may be released offsite, or a significant increase in individual or cumulative occupational radiation exposure. Based on the foregoing, SNC concludes the proposed Technical Specifications meet the criteria in 10 CFR 51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

Edwin I. Hatch Nuclear Plant – Units 2
License Amendment Request Concerning Safety Limit Minimum Critical Power Ratio

Attachment 2

Marked Technical Specification Pages

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 24% RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 785 psig and core flow ≥ 10% rated core flow:

MCPR shall be ~~≥ 1.08~~ 1.09 for two recirculation loop operation or ≥ ~~1.10~~ 1.12 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System (RCS) Pressure SL

Reactor steam dome pressure shall be ≤ 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

Edwin I. Hatch Nuclear Plant – Units 2
License Amendment Request Concerning Safety Limit
Minimum Critical Power Ratio

Attachment 3

Clean Typed Technical Specification Pages

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 24% RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 785 psig and core flow ≥ 10% rated core flow:

MCPR shall be ≥ 1.09 for two recirculation loop operation or ≥ 1.12 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System (RCS) Pressure SL

Reactor steam dome pressure shall be ≤ 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

Global Nuclear Fuel – Americas

AFFIDAVIT

I, Lukas Trosman, state as follows:

(1) I am Engineering 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, VSP-SNC-HV1-14-068, Vickie Perry (GNF-A) to Susan Hoxie-Key (Southern Nuclear Operating Company), entitled "GNF Additional Information for SLMCPR Technical Specification Submittal Letter for Hatch 2 Cycle 24," dated July 14, 2014. GNF-A proprietary information in Enclosure 1, which is entitled "GNF Additional Information Regarding the Requested Changes to the Technical Specification SLMCPR, Hatch 2 Cycle 24," is identified by a dotted underline inside double square brackets. [[This sentence is an example.{3}]] GNF proprietary information in figures and some tables is 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 14th day of July 2014.

Lukas Trosman
Engineering Manager, Reload Design and Analysis
Global Nuclear Fuel – Americas, LLC
3901 Castle Hayne Road
Wilmington, NC 28401