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SOUTHERN COMPANY
Energy to Serve Your World℠

January 4, 2002

Docket No. 50-321

HL-6163

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

Edwin I. Hatch Nuclear Plant - Unit 1
Request to Revise Technical Specifications:
Safety Limit Minimum Critical Power Ratios (SLMCPR)

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, as required by 10 CFR 50.59(c)(1), Southern Nuclear Operating Company (SNC) hereby proposes a change to the Plant Hatch Unit 1 Technical Specifications, Appendix A to Operating License DPR-57. This application proposes to change the Safety Limit Minimum Critical Power Ratio (SLMCPR) for Single Loop Operation in Technical Specification (TS) 2.1.1.2 to reflect results of a cycle-specific calculation performed for Unit 1 Operating Cycle 21, using NRC-approved methodology for determining SLMCPRs.

Enclosure 1 provides a description of the proposed change and an explanation of the basis for the change. Enclosure 2 details the bases for SNC's determination that the proposed change does not involve a significant hazards consideration. Enclosure 3 provides page change instructions for incorporating the proposed change. Following Enclosure 3 are the revised Technical Specifications page and the corresponding marked-up page.

The information supporting this proposed change was provided by Global Nuclear Fuel and is considered to be Global Nuclear Fuel proprietary information as described in 10 CFR 2.790(a)(4) and the attached affidavit (Attachment 1). It is requested that this information be withheld from public disclosure. Proprietary text is denoted in Enclosure 1 by enclosure in double brackets. A nonproprietary version of Enclosure 1 is attached for public disclosure (Attachment 2).

Southern Nuclear Operating Company requests the proposed amendment for Cycle 21 be issued with the amendment to be effective prior to the restart from the Plant Hatch Unit 1 outage currently scheduled to begin in March 2002.

In accordance with the requirements of 10 CFR 50.91, the designated State official will be sent a copy of this letter and all applicable enclosures.

A001

Mr. H. L. Sumner, Jr. states he is Vice President of Southern Nuclear Operating Company and 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,

Lewis Sumner

H. L. Sumner, Jr.

Sworn to and subscribed before me this 4th *day of* January *2002*

Elaine E. Bolton

Notary Public

Commission Expiration Date: 5-25-03

Enclosures:
1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Page Change Instructions

Attachments:
1. Affidavit of Proprietary Information
2. Nonproprietary Version of the Basis for Change Request

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
SNC Document Management (R-Type A02.001)

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. L. N. Olshan, Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector - Hatch

State of Georgia
Mr. L. C. Barrett, Commissioner - Department of Natural Resources

Enclosure 2

Edwin I. Hatch Nuclear Plant - Unit 1
Request to Revise Technical Specifications:
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10 CFR 50.92 Evaluation

In 10 CFR 50.92(c), the NRC provides the following standards to be used in determining the existence of a significant hazards consideration:

> ...a proposed amendment to an operating license for a facility licensed under §50.21(b) or §50.22 or for a testing facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Involve a significant reduction in a margin of safety.

Southern Nuclear Operating Company has reviewed the proposed license amendment request and determined its adoption does not involve a significant hazards consideration based on the following discussion.

Basis for no significant hazards consideration determination

1. **The proposed Technical Specification change does not involve a significant increase in the probability or consequences of an accident previously evaluated.**

   The derivation of the revised SLO SLMCPR for Plant Hatch Unit 1 Cycle 21 for incorporation into the TS, and its use to determine cycle-specific thermal limits, has been performed using NRC-approved methods and procedures. The procedures incorporate cycle-specific parameters and reduced power distribution uncertainties in the determination of the value for the SLMCPR. These calculations do not change the method of operating the plant and have no effect on the probability of an accident initiating event or transient.

   The basis of the MCPR Safety Limit is to ensure no mechanistic fuel damage is calculated to occur if the limit is not violated. The new SLO SLMCPR preserves the existing margin to transition boiling and the probability of fuel damage is not increased. Therefore, the proposed change does not involve an increase in the probability or consequences of an accident previously evaluated.

2. **The proposed TS change does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

   The proposed change is the result of a cycle-specific application of NRC-approved methods to the Unit 1 Cycle 21 core reload. This change does not involve any new method for operating the facility and does not involve any facility modifications. No new initiating events or transients result from this change. Therefore, the proposed TS change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. **The proposed TS change does not involve a significant reduction in a margin of safety.**

   The margin of safety as defined in the TS bases will remain the same. Cycle-specific SLMCPRs are calculated using NRC-approved methods and procedures, and meet the current fuel design and licensing criteria. The SLO SLMCPR will be high enough to ensure that greater than 99.9% of all fuel rods in the core are expected to avoid transition boiling if the limit is not violated, thereby preserving the fuel cladding integrity. Therefore, the proposed TS change does not involve a reduction in the margin of safety.

The proposed change has been reviewed and recommended for approval by the Plant Hatch Plant Review Board and reviewed by the Safety Review Board.

ENVIRONMENTAL IMPACT

The proposed Technical Specification change was reviewed against the criteria of 10 CFR 51.22 for environmental considerations. The proposed change does 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 exposures. Based on the foregoing, Southern Nuclear Operating Company concludes the proposed Technical Specification meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

CONCLUSION

Based on the evaluation above: (1) there is reasonable assurance the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the proposed amendment will not be inimical to the common defense and security or the health and safety of the public.

SCHEDULE OF CHANGE

This amendment is needed to support Unit 1 Operating Cycle 21 and will be implemented following refueling outage (RFO) 20, following receipt of NRC approval.

Enclosure 3

Edwin I. Hatch Nuclear Plant - Unit 1
Request to Revise Technical Specifications:
Safety Limit Minimum Critical Powers Ratios (SLMCPR)

Page Change Instructions

Unit 1

Page	Replace
2.0-1	2.0-1

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 ≤ 25% RTP.

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

MCPR shall be ≥ 1.07 for two recirculation loop operation or ≥ 1.09 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:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager, the corporate executive responsible for overall plant nuclear safety, and the offsite review committee.

(continued)

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 ≤ 25% RTP.

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

MCPR shall be ≥ 1.07 for two recirculation loop operation or ≥ ~~1.08~~ 1.09 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.

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2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager, the corporate executive responsible for overall plant nuclear safety, and the offsite review committee.

(continued)

ATTACHMENT 1

Edwin I. Hatch Nuclear Plant - Unit 1
Request to Revise Technical Specifications:
Safety Limit Minimum Critical Power Ratios (SLMCPR)

Affidavit of Proprietary Information

Affidavit

I, Glen A. Watford, being duly sworn, depose and 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, "Additional Information Regarding the Cycle Specific SLMCPR for Hatch Unit 1 Cycle 21," December 11, 2001.

(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) 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:

Glen A. Watford, 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 13th day of December, 2001

Glen A. Watford
Global Nuclear Fuel – Americas, LLC

Subscribed and sworn before me this 13 day of DECEMBER, 2001

James E McGinness

Notary Public, State of North Carolina

JAMES E. McGINNESS
Notary Public, State of North Carolina
New Hanover County
My Commision Expires 1/23/2006

My Commission Expires _____

ATTACHMENT 2

Edwin I. Hatch Nuclear Plant - Unit 1
Request to Revise Technical Specifications:
Safety Limit Minimum Critical Power Ratios (SLMCPR)

Nonproprietary Version of the Basis for Change Request

Enclosure 1

Edwin I. Hatch Nuclear Plant - Unit 1
Request to Revise Technical Specifications:
Safety Limit Minimum Critical Power Ratios (SLMCPR)

Basis for Change Request

PROPOSED CHANGES

SNC requests that the Technical Specifications (TS) contained in Appendix A to the Plant Hatch Unit 1 Operating License DPR-57 be amended to revise Technical Specifications Section 2.1.1.2 to reflect a change in the Single Loop Operation (SLO) Safety Limit Minimum Critical Power Ratio (SLMCPR), which is based on Global Nuclear Fuel's (GNF) application of GE's NRC-approved methodology for calculating SLMCPRs.

BACKGROUND

The proposed change involves revising the SLO SLMCPR contained in Section 2.1.1.2 of the Plant Hatch Unit 1 TS. In the course of calculating a cycle-specific SLMCPR for another utility, it was determined that the GESTAR II (*General Electric Standard Application for Reactor Fuel,* NEDE-24011-P-A-11[1], and U. S. Supplement NEDE-24011-P-A-11-US[1], November 17, 1995) fuel type generic SLMCPR may be non-conservative when applied to some core and fuel designs. To rectify this deficiency, GE proposed, and the NRC accepted, a new procedure for determining cycle-specific SLMCPRs (Reference 1). GE also proposed, and the NRC has accepted, the application of reduced power distribution uncertainties in the calculation of SLMCPRs for plants using the 3D MONICORE model in the process computer for core monitoring (Reference 1).

DISCUSSION OF THE PROPOSED CHANGE

GNF's calculation for the plant-specific SLMCPR values for Unit 1 Cycle 21 is based upon NRC-approved methods and procedures for calculating SLMCPRs each operating cycle for plants using the 3D MONICORE system. The procedures incorporate cycle-specific parameters into the analysis, including the reference loading pattern and actual bundle parameters, which are evaluated at the projected exposure distribution based on projected control blade patterns for the rodded burn through the cycle. The analysis considers the full cycle exposure range to determine the most limiting point(s). At these exposure point(s), conservative variations of the projected control blade patterns are used to maximize the number of bundles that contribute rods calculated to be susceptible to boiling transition in order to obtain a conservative calculation of the SLMCPR. The calculation also includes the application of reduced power distribution uncertainties associated with the 3D MONICORE core monitoring system. This calculation resulted in a Cycle 21 SLMCPR value of 1.07 for dual loop operation (DLO) (which is the same as the current Cycle 20 value), and 1.09 for SLO (which currently has a value of 1.08). Therefore, only the SLO SLMCPR value is being revised. Note that an increase in SLMCPR is more restrictive for plant operations; therefore, this is a conservative change.

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[1] Revision 11 has since been superseded by Revision 14, dated June, 2000. This revision incorporates the material contained in Reference 1.

EVALUATION

The proposed change revises the Technical Specifications to reflect a change in the SLO SLMCPR due to the plant-specific evaluation performed by GNF for Unit 1, Reload 20, Cycle 21. Cycle-specific DLO and SLO SLMCPRs were calculated using NRC-approved methods and procedures (Reference 1). The procedures incorporate plant and cycle-specific parameters which include: 1) the expected reference loading pattern, 2) conservative variations of projected control blade patterns, 3) the actual bundle parameters, 4) the full cycle exposure range, and 5) reduced power distribution uncertainties associated with the process computer system.

The SLMCPR is set such that no mechanistic fuel damage is calculated to occur if the limit is not violated. Since the parameters which result in fuel damage are not directly observable during reactor operation, the thermal and hydraulic conditions resulting in a departure from nucleate boiling have been used to mark the beginning of the region where fuel damage could occur. Although it is recognized that a departure from nucleate boiling would not necessarily result in damage to BWR fuel rods, the critical power at which boiling transition is calculated to occur has been adopted as a convenient limit. However, the 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 CPR in the limiting fuel assembly for which more the 99.9% of the fuel rods in the core are expected to avoid boiling transition considering the power distribution within the core and all uncertainties. The SLMCPRs for Cycle 21 at Unit 1 are 1.07 for DLO (no change from Cycle 20) and 1.09 for SLO, which is an increase of 0.01 from the Cycle 20 value.

COMPARISON OF HATCH UNIT 1 SLMCPR VALUES FOR CYCLES 21 AND 20

Table 1 summarizes the relevant input parameters and results of the SLMCPR determination for the Hatch Unit 1 Cycle 21 and 20 cores. The SLMCPR evaluations were performed using NRC approved methods and uncertainties (Reference 1). These evaluations yield the same calculated dual-loop SLMCPR values even though different inputs were used. The quantities that have been shown to have some impact on the determination of the safety limit MCPR (SLMCPR) are provided.

In comparing the Hatch Unit 1 Cycle 21 and Cycle 20 SLMCPR values it is important to note the impact of the differences in the core and bundle designs. These differences are summarized in Table 1.

In general, the calculated safety limit is dominated by two key parameters: (1) flatness of the core bundle-by-bundle MCPR distributions and (2) flatness of the bundle pin-by-pin power/R-factor distributions. Greater flatness in either parameter yields more rods susceptible to boiling transition and thus a higher calculated SLMCPR.

[[ ]]

The uncontrolled bundle pin-by-pin power distributions were compared between the Hatch Unit 1 Cycle 21 bundles and the Cycle 20 bundles. Pin-by-pin power distributions are characterized in terms of R-factors using the NRC approved methodology (Reference 2). For the Hatch Unit 1 Cycle 21 limiting case analyzed at peak hot excess, [[ ]] the Hatch Unit 1 Cycle 21 bundle power distributions are flatter than the bundle power distributions used for the Cycle 20 SLMCPR analysis.

SUMMARY

[[ ]] have been used to compare quantities that impact the calculated SLMCPR value. Based on these comparisons, the conclusion is reached that the Hatch Unit 1 Cycle 20 core has a flatter core MCPR distribution [[ ]] than what was used to perform the Cycle 21 SLMCPR evaluation; and the Hatch Unit 1 Cycle 21 core has a flatter in-bundle power distributions [[ ]] than what was used to perform the Cycle 20 SLMCPR evaluation.

The calculated 1.07 Monte Carlo SLMCPR for Hatch Unit 1 Cycle 21 is consistent with what one would expect [[ ]] the 1.07 SLMCPR value is appropriate.

Based on all of the facts, observations and arguments presented above, it is concluded that the calculated SLMCPR value of 1.07 for the Hatch Unit 1 Cycle 21 core is appropriate. It is reasonable that this value is same as the 1.07 value calculated for the previous cycle.

For single loop operations (SLO) the calculated safety limit MCPR for the limiting case is 1.09 as determined by specific calculations for Hatch Unit 1 Cycle 21.

SUPPORTING INFORMATION

The following information is provided in response to NRC questions on similar submittals regarding changes in Technical Specification values of SLMCPR. NRC questions pertaining to how GE14 applications satisfy the conditions of the NRC SER (Reference 1) have been addressed in Reference 4. Other generically applicable questions related to application of the GEXL14 correlation and the applicable range for the R-factor methodology are addressed in Reference 5. Only those items that require a plant/cycle specific response are presented below since all the others are contained in the references that have already been provided to the NRC.

The core loading information for Hatch Unit 1 Cycles 20 and 21 is provided in Figures 1 and 2, respectively. The impact of the fuel loading pattern differences on the calculated SLMCPR is correlated to the values of [[ ]].

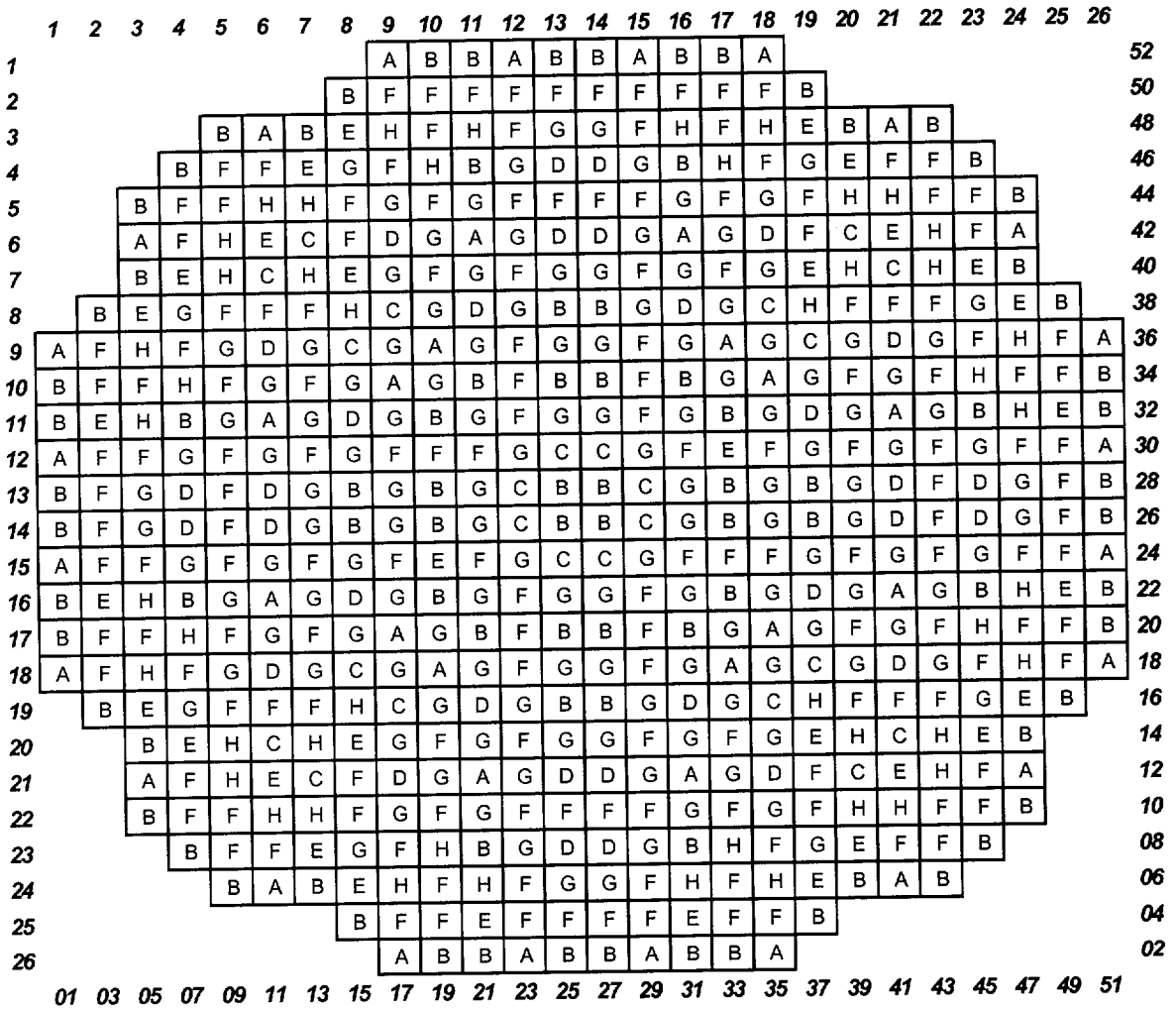
The power and non-power distribution uncertainties that are used in the analyses are indicated in Table 1. The referenced document numbers have previously been reviewed and approved by the NRC.

Table 1

Comparison of the Hatch Unit 1 Cycle 20 and Cycle 21 SLMCPR

QUANTITY, DESCRIPTION	Hatch Unit 1 Cycle 20	Hatch Unit 1 Cycle 21
Number of Bundles in Core	560	560
Limiting Cycle Exposure Point	EOC-1.0K	PHE
Cycle Exposure at Limiting Point [MWd/STU]	11454	9000
Reload Fuel Type	GE13	GE14
Latest Reload Batch Fraction [%]	32.9%	40.0%
Latest Reload Average Batch Weight % Enrichment	3.78%	3.98%
Batch Fraction for GE14	0.0%	40.0%
Batch Fraction for GE13	100.0%	60.0%
Core Average Weight % Enrichment	3.70%	3.86%
Core MCPR (for limiting rod pattern)	1.32	1.38
[[		]]
[[		]]
Power distribution uncertainty	Reduced NEDO-32694P-A	Reduced NEDO-32694P-A
Non-power distribution uncertainty	Revised NEDC-32601P-A	Revised NEDC-32601P-A
Calculated Safety Limit MCPR	**1.07**	**1.07**

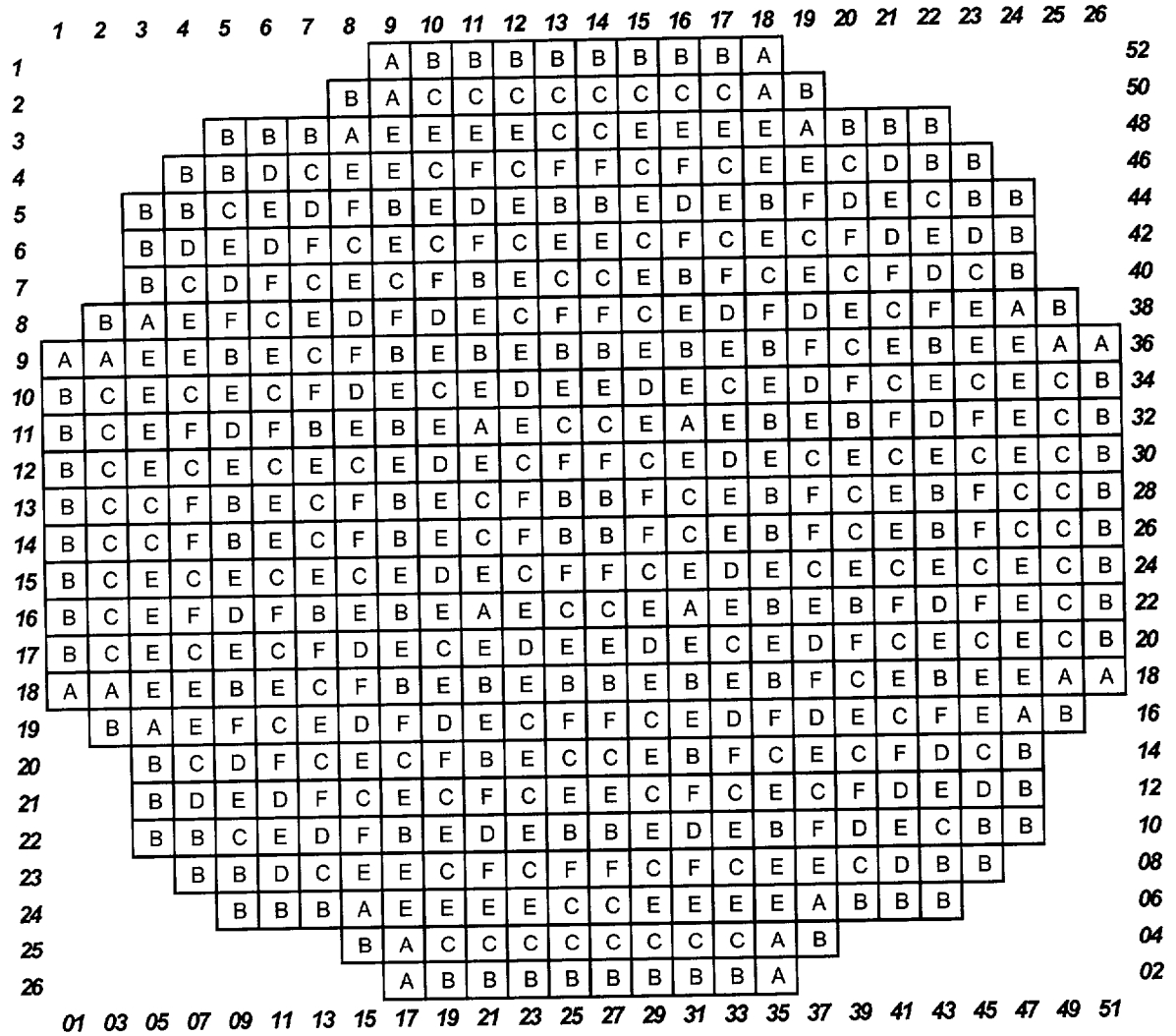
Figure 1
Reference Core Loading Pattern – Cycle 20



FUEL TYPE

A GE13-P9HTB355-4G5.0/6G4.0-100T-146-T
B GE13-P9HTB355-12GZ-100T-146-T
C GE13-P9HTB355-4G5.0/6G4.0-100T-146-T
D GE13-P9HTB355-12GZ-100T-146-T
E GE13-P9HTB378-6G5.0/6G4.0/1G2.0-100T-146-T
F GE13-P9HTB378-6G5.0/6G4.0-100T-146-T
G GE13-P9DTB378-6G5.0/6G4.0-100T-146-T-2411
H GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T

Figure 2
Reference Core Loading Pattern – Cycle 21



FUEL TYPE

A GE13-P9HTB378-6G5.0/6G4.0/1G2.0-100T-146-T
B GE13-P9HTB378-6G5.0/6G4.0-100T-146-T
C GE13-P9DTB378-6G5.0/6G4.0-100T-146-T-2411
D GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T
E GE14-P10DNAB398-15GZ-100T-150-T-2518
F GE14-P10DNAB399-16GZ-100T-150-T-2517

CONCLUSION

Based on all of the information presented above, it is concluded that the calculated SLMCPR values of 1.07 and 1.09, for dual loop and single loop operation, respectively, for the Hatch-1 Cycle 21 core are appropriate.

REFERENCES

1. Letter, Frank Akstulewicz (NRC) to Glen A. Watford (GE), "Acceptance for Referencing of Licensing Topical Reports NEDC-32601P, *Methodology and Uncertainties for Safety Limit MCPR Evaluations*; NEDC-32694P, *Power Distribution Uncertainties for Safety Limit MCPR Evaluation*; and Amendment 25 to NEDE-24011-P-A on Cycle Specific Safety Limit MCPR," (TAC Nos. M97490, M99069 and M97491), March 11, 1999.
2. Letter, Thomas H. Essig (NRC) to Glen A. Watford (GE), "Acceptance for Referencing of Licensing Topical Report NEDC-32505P, Revision 1, *R-Factor Calculation Method for GE11, GE12 and GE13 Fuel*," (TAC No. M99070 and M95081), January 11, 1999.
3. *General Electric BWR Thermal Analysis Basis (GETAB): Data, Correlation and Design Application*, NEDO-10958-A, January 1977.
4. Letter, Glen A. Watford (GNF-A) to U. S. Nuclear Regulatory Commission Document Control Desk with attention to R. Pulsifer (NRC), "Confirmation of 10x10 Fuel Design Applicability to Improved SLMCPR, Power Distribution and R-Factor Methodologies", FLN-2001-016, September 14, 2001.
5. Letter, Glen A. Watford (GNF-A) to U. S. Nuclear Regulatory Commission Document Control Desk with attention to J. Donoghue (NRC), "Confirmation of Applicability of the GEXL14 Correlation and Associated R-Factor Methodology for Calculating SLMCPR Values in Cores Containing GE14 Fuel", FLN-2001-017, October 1, 2001.