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SOUTHERN COMPANY
Energy to Serve Your World™

March 15, 2002

Docket Nos. 50-321

HL-6214

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

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

Ladies and Gentlemen:

By letter dated January 4, 2002, Southern Nuclear Operating Company (SNC) submitted a request to revise the Plant Hatch Unit 1 Technical Specifications, Appendix A to Operating License DPR-57. The request proposed a change to 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. On February 5, 2002, the NRC Project Manager – Hatch forwarded a Request for Additional Information (RAI) from the staff.

Attachment 1 provides a proprietary version of the response to the RAI, Attachment 2 is a non-proprietary version of the response. The response to the (RAI) was provided by Global Nuclear Fuel and is considered to contain Global Nuclear Fuel proprietary information as described in 10 CFR 2.790(a)(4) and the attached affidavit (Attachment 3).

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 15th *day of* March *2002.*

Jan C. Edge
Notary Public

Commission Expiration Date: 7/27/05

IFL/eb

A001

Attachments:
1. Proprietary Version of the RAI Response
2. Nonproprietary Version of the RAI response
3. Affidavit of Proprietary Information

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

U.S. Nuclear Regulatory Commission, Washington, D.C. (w/o enclosures)
Mr. L. N. Olshan, Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II (w/o enclosures)
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector - Hatch

State of Georgia (w/o enclosures)
Mr. L. C. Barrett, Commissioner - Department of Natural Resources

Attachment 2

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

Nonproprietary Version of the RAI response

ATTACHMENT 2

**Responses to REQUEST FOR ADDITIONAL INFORMATION
RELATING TO AMENDMENT NO. TO LICENSE NO. DPR-57
SOUTHERN NUCLEAR OPERATING COMPANY
EDWIN I. HATCH NUCLEAR PLANT, UNIT 1
DOCKET NO. 50-321**

1. Figures 1 and 2 for Cycle 20 and Cycle 21 Reference Core Loading Pattern, respectively, should be updated to include quantity of fuel assemblies, and when those assemblies are loaded in the core.

Response to 1):

Updated figures of the core loading patterns are provided which include the quantity of fuel assemblies and the cycle in which those assemblies were first loaded in the core.

2. a) Provide justification that the overall GEXL14 uncertainty is still valid since the staff found the discrepancy in the data bases while conducted an audit on the GEXL14 correlation and provide clarification for the impact on the SLMCPR calculation due to this discrepancy.

Response to 2a)

In a meeting with the NRC staff on February 11, 2002 (Reference 1) [[ ]] To evaluate the impact on SLMCPR, the process described in Reference 1 was applied to Hatch Unit 1, Cycle 21. The results are shown in Table 1.

TABLE 1

Net Adjustment to SLMCPR [[to account for Top-peaked Power Shapes]]		Dual Loop Ops.			Single Loop Ops.
		BOC	MOC	EOC	MOC
	Submitted SLMCPR	1.07	1.07	1.07	1.09
Step	Calculated M/C SLMCPR	[[			]]
1	Margin to Submitted SLMCPR	[[			]]
2,3	[[				]]
4	Credit for Reduced Uncertainties	[[			]]
	[[				]]
	Net unrounded change	[[			]]
	Adjusted SLMCPR with rounding	1.06	1.07	1.06	1.09
	Revised SLMCPR for Tech Specs	**1.07**			**1.09**
Step 5 credit applies only for OLMCPR and is not relevant for Tech Specs under review.					

[[GNF Proprietary Information enclosed in double brackets]]

No SLMCPR penalty was assessed [[ ]] for Hatch Unit 1, Cycle 21 because the following process revealed that such a penalty is not applicable. [[ ]] For Hatch Unit 1, Cycle 21, [[ ]] the SLMCPR penalty does not apply. The details for the cycle-specific assessment that was performed for Hatch Unit 1, Cycle 21 are documented in Reference 2.

[[ ]]

Therefore, as indicated in Table 1, no change is needed in the requested values for the Single Loop Operation(SLO) and Dual Loop Operation (DLO) Technical Specification SLMCPRs for Hatch Unit 1, Cycle 21.

Reference 1: G.A. Watford (GNF) letter J.E. Donohue (NRC), Final Presentation Material for GEXL Presentation - February 11, 2002;FLN-2002-004; February 12, 2002.

Reference 2: GNF-A design record file (DRF) J11-03936-05 titled "Hatch-1 Reload 13 / Cycle 21 – Safety Limit MCPR (SLMCPR)"

Reference 3: *Methodology and Uncertainties for Safety Limit MCPR Evaluations*, NEDC-32601P-A, August 1999.

2. b) Also, describe in details about the cause of the increase of the calculated safety limit MCPR value by 0.01 for single recirculation loop operation while there is no change for two recirculation loop operation SLMCPR value given in Table 1 using same approved methodologies.

Response to 2b):

The difference between the Cycle 20 single and two-loop SLMCPRs is 0.010. The difference between the Cycle 21 single and two-loop SLMCPRs is 0.015. Thus, the relative difference between the two cycles' single-loop SLMCPRs is 0.005. There is an inherent uncertainty in the Monte Carlo results which corresponds to a standard deviation 0.005. The observed difference in the single-loop value is well within expectations given this uncertainty. Thus the apparent 0.01 increase in the single loop SLMCPR from Cycle 20 to Cycle 21 is a combination of the inherent uncertainty in the Monte Carlo results and rounding. In view of the 0.005 uncertainty in the Monte Carlo process, it is appropriate to round the calculated SLMCPR result to the nearest second digit past the decimal point because an additional conservatism of 0.005 to account for rounding has been provided for in the process. The justification was provided and previously reviewed and accepted by the NRC staff as documented on pages A-24 and A-25 of NEDC-32601P-A.

Figure 1 Reference Core Loading Pattern – Cycle 20

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
1									A	B	B	A	B	B	A	B	B	A									52
2								B	F	F	F	F	F	F	F	F	F	F	B								50
3					B	A	B	E	H	F	H	F	G	G	F	H	F	H	E	B	A	B					48
4				B	F	F	E	G	F	H	B	G	D	D	G	B	H	F	G	E	F	F	B				46
5			B	F	F	H	H	F	G	F	G	F	F	F	F	G	F	G	F	H	H	F	F	B			44
6			A	F	H	E	C	F	D	G	A	G	D	D	G	A	G	D	F	C	E	H	F	A			42
7			B	E	H	C	H	E	G	F	G	F	G	G	F	G	F	G	E	H	C	H	E	B			40
8		B	E	G	F	F	F	H	C	G	D	G	B	B	G	D	G	C	H	F	F	F	G	E	B		38
9	A	F	H	F	G	D	G	C	G	A	G	F	G	G	F	G	A	G	C	G	D	G	F	H	F	A	36
10	B	F	F	H	F	G	F	G	A	G	B	F	B	B	F	B	G	A	G	F	G	F	H	F	F	B	34
11	B	E	H	B	G	A	G	D	G	B	G	F	G	G	F	G	B	G	D	G	A	G	B	H	E	B	32
12	A	F	F	G	F	G	F	G	F	F	F	G	C	C	G	F	E	F	G	F	G	F	G	F	F	A	30
13	B	F	G	D	F	D	G	B	G	B	G	C	B	B	C	G	B	G	B	G	D	F	D	G	F	B	28
14	B	F	G	D	F	D	G	B	G	B	G	C	B	B	C	G	B	G	B	G	D	F	D	G	F	B	26
15	A	F	F	G	F	G	F	G	F	E	F	G	C	C	G	F	F	F	G	F	G	F	G	F	F	A	24
16	B	E	H	B	G	A	G	D	G	B	G	F	G	G	F	G	B	G	D	G	A	G	B	H	E	B	22
17	B	F	F	H	F	G	F	G	A	G	B	F	B	B	F	B	G	A	G	F	G	F	H	F	F	B	20
18	A	F	H	F	G	D	G	C	G	A	G	F	G	G	F	G	A	G	C	G	D	G	F	H	F	A	18
19		B	E	G	F	F	F	H	C	G	D	G	B	B	G	D	G	C	H	F	F	F	G	E	B		16
20			B	E	H	C	H	E	G	F	G	F	G	G	F	G	F	G	E	H	C	H	E	B			14
21			A	F	H	E	C	F	D	G	A	G	D	D	G	A	G	D	F	C	E	H	F	A			12
22			B	F	F	H	H	F	G	F	G	F	F	F	F	G	F	G	F	H	H	F	F	B			10
23				B	F	F	E	G	F	H	B	G	D	D	G	B	H	F	G	E	F	F	B				08
24					B	A	B	E	H	F	H	F	G	G	F	H	F	H	E	B	A	B					06
25								B	F	F	E	F	F	F	F	E	F	F	B								04
26									A	B	B	A	B	B	A	B	B	A									02
	01	03	05	07	09	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	

	FUEL	CYCLE	NUMBER
A	GE13-P9HTB355-4G5.0/6G4.0-100T-146-T	18	40
B	GE13-P9HTB355-12GZ-100T-146-T	18	88
C	GE13-P9HTB355-4G5.0/6G4.0-100T-146-T	18	24
D	GE13-P9HTB355-12GZ-100T-146-T	18	32
E	GE13-P9HTB378-6G5.0/6G4.0/1G2.0-100T-146-T	19	32
F	GE13-P9HTB378-6G5.0/6G4.0-100T-146-T	19	160
G	GE13-P9DTB378-6G5.0/6G4.0-100T-146-T-2411	20	136
H	GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T	20	48

Figure 2 Reference Core Loading Pattern – Cycle 21

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
1									A	B	B	B	B	B	B	B	B	A									52
2								B	A	C	C	C	C	C	C	C	C	A	B								50
3					B	B	B	A	E	E	E	E	C	C	E	E	E	E	A	B	B	B					48
4				B	B	D	C	E	E	C	F	C	F	F	C	F	C	E	E	C	D	B	B				46
5			B	B	C	E	D	F	B	E	D	E	B	B	E	D	E	B	F	D	E	C	B	B			44
6			B	D	E	D	F	C	E	C	F	C	E	E	C	F	C	E	C	F	D	E	D	B			42
7			B	C	D	F	C	E	C	F	B	E	C	C	E	B	F	C	E	C	F	D	C	B			40
8		B	A	E	F	C	E	D	F	D	E	C	F	F	C	E	D	F	D	E	C	F	E	A	B		38
9	A	A	E	E	B	E	C	F	B	E	B	E	B	B	E	B	E	B	F	C	E	B	E	E	A	A	36
10	B	C	E	C	E	C	F	D	E	C	E	D	E	E	D	E	C	E	D	F	C	E	C	E	C	B	34
11	B	C	E	F	D	F	B	E	B	E	A	E	C	C	E	A	E	B	E	B	F	D	F	E	C	B	32
12	B	C	E	C	E	C	E	C	E	D	E	C	F	F	C	E	D	E	C	E	C	E	C	E	C	B	30
13	B	C	C	F	B	E	C	F	B	E	C	F	B	B	F	C	E	B	F	C	E	B	F	C	C	B	28
14	B	C	C	F	B	E	C	F	B	E	C	F	B	B	F	C	E	B	F	C	E	B	F	C	C	B	26
15	B	C	E	C	E	C	E	C	E	D	E	C	F	F	C	E	D	E	C	E	C	E	C	E	C	B	24
16	B	C	E	F	D	F	B	E	B	E	A	E	C	C	E	A	E	B	E	B	F	D	F	E	C	B	22
17	B	C	E	C	E	C	F	D	E	C	E	D	E	E	D	E	C	E	D	F	C	E	C	E	C	B	20
18	A	A	E	E	B	E	C	F	B	E	B	E	B	B	E	B	E	B	F	C	E	B	E	E	A	A	18
19		B	A	E	F	C	E	D	F	D	E	C	F	F	C	E	D	F	D	E	C	F	E	A	B		16
20			B	C	D	F	C	E	C	F	B	E	C	C	E	B	F	C	E	C	F	D	C	B			14
21			B	D	E	D	F	C	E	C	F	C	E	E	C	F	C	E	C	F	D	E	D	B			12
22			B	B	C	E	D	F	B	E	D	E	B	B	E	D	E	B	F	D	E	C	B	B			10
23				B	B	D	C	E	E	C	F	C	F	F	C	F	C	E	E	C	D	B	B				08
24					B	B	B	A	E	E	E	E	C	C	E	E	E	E	A	B	B	B					06
25								B	A	C	C	C	C	C	C	C	C	A	B								04
26									A	B	B	B	B	B	B	B	B	A									02
	01	03	05	07	09	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	

	FUEL	CYCLE	NUMBER
A	GE13-P9HTB378-6G5.0/6G4.0/1G2.0-100T-146-T	19	28
B	GE13-P9HTB378-6G5.0/6G4.0-100T-146-T	19	124
C	GE13-P9DTB378-6G5.0/6G4.0-100T-146-T-2411	20	136
D	GE13-P9DTB378-6G5.0/6G4.0/1G2.0-100T-146-T	20	48
E	GE14-P10DNAB398-15GZ-100T-150-T-2518	21	152
F	GE14-P10DNAB399-16GZ-100T-150-T-2517	21	72

[[GNF Proprietary Information enclosed in double brackets]]

Attachment 3

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

Affidavit of Proprietary Information

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.

(2) The information sought to be withheld is contained in the attachment, "Responses to Request for Additional Information Relating to Amendment No. To License No. DPR-57 Southern Nuclear Operating Company Edwin I. Hatch Nuclear Plant, Unit 1 Docket No. 50-321," March 13, 2002.

(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:

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 14 day of March 2002

Charles M. Vaughan
Charles M. Vaughan
Global Nuclear Fuel – Americas, LLC

NOTARY PUBLIC NEW HANOVER COUNTY, NC

Subscribed and sworn before me this 14 day of March 2002

Notary Public, State of North Carolina
My Commission Expires 12-14-02

This is an acknowledgment.

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