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September 13, 2004

U. S. Nuclear Regulatory Commission
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Subject: Oconee Nuclear Site Docket No. 50-269, 50-270, 50-287
Core Operating Limits Report (COLR)

Gentlemen:

Attached, pursuant to Oconee Technical Specifications 5.6.5, is an information copy of a revision to the Core Operating Limits Report for Oconee Unit 3, Cycle 21, Rev. 20.

Very truly yours,

R. A. Jones Site, Vice President
Oconee Nuclear Site

Attachment

A001

xc w/att: Mr. W. D. Travers, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II

Mr. L. N. Olshan, Project Manager
Office of Nuclear Reactor Regulation

Mr. Mel Shannon
Senior Resident Inspector
Oconee Nuclear Site

PRIORITY SuperRush

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WORK ITEM: M-5

OCONEE 3 CYCLE 21
CORE OPERATING LIMITS REPORT
Page 1 of 1

Date: 09/02/04
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NUCLEAR STATION ENGR MANAGER
GS-SVP NUCLEAR SUPPORT

BY:
J W SIMMONS JWS/TER EC08H

Duke Power Company

Oconee 3 Cycle 21

Core Operating Limits Report

QA Condition 1

~~Not Reviewed or Approved by CFAM 3.13~~ Judy Smith RGC 9-8-04

Prepared By: J. M. Sanders Date: 01 Sep 2004

Checked By: G. M. Presnell G M Presnell Date: 9-1-04

CDR By: R. G. Chow Date: 9/1/04

Approved By: R. R. St. Clair Stephen P. Schultz for Date: 9/01/04

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Inspection Waived By: _____ (Sponsor) Date: 9/01/04

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RES (Electrical Only)	☐	Inspected By/Date: _____
RES (Reactor)	☐	Inspected By/Date: _____
MOD	☐	Inspected By/Date: _____
Other (_____)	☐	Inspected By/Date: _____

OCONEE

	Inspection Waived	
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RES (Electrical Only)	☑	Inspected By/Date: _____
RES (Reactor)	☑	Inspected By/Date: _____
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Oconee 3 Cycle 21

Core Operating Limits Report

Insertion Sheet for Revision 20

Remove these revision 19 pages	Insert these revision 20 pages
1 - 4, 6	1 - 4, 6

Revision Log

Revision	Effective Date	Pages Revised	Pages Added	Pages Deleted	Total Effective Pages
Oconee 3 Cycle 21 revisions below					
20	Sep 2004	1 - 4, 6	-	-	33
19	Feb 2004	1 - 4, 6	-	-	33
18	Nov. 2003	1 - 3, 5	-	-	33
17	Apr. 2003	1 - 31	32 - 33	-	33
Oconee 3 Cycle 20 revisions below					
16	Oct. 2002	1 - 3, 5	-	-	31
15	Nov. 2001	1 - 3	-	-	31
14	Nov. 2001	1 - 31	-	-	31
Oconee 3 Cycle 19 revisions below					
13	Apr. 2000	1 - 31	-	-	31

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Oconee 3 Cycle 21

1.0 Error Adjusted Core Operating Limits

The Core Operating Limits Report for O3C21 has been prepared in accordance with the requirements of ITS 5.6.5. The core operating limits within this report have been developed using NRC approved methodology identified in references 1 through 10. The RPS protective limits and maximum allowable setpoints are documented in references 11 through 13. These limits are validated for use in O3C21 by references 14 through 16. The O3C21 analyses assume a design flow of 107.5% of 88,000 gpm per RCS pump, radial local peaking ($F\Delta h$) of 1.714, and axial peaking factor (Fz) of 1.5, and an EOC ($\leq$ 100 ppmB) Tavg reduction of up to 10 ^{o}F provided 4 RCPs are in operation and Tavg does not decrease below 569 ^{o}F.

The error adjusted core operating limits included in section 1 of the report incorporate all necessary uncertainties and margins required for operation of the O3C21 reload core.

1.1 References

1. Nuclear Design Methodology Using CASMO-3 / SIMULATE-3P, DPC-NE-1004P-A, Revision 0, SER dated November 23, 1992.

2. Oconee Nuclear Station Reload Design Methodology II, DPC-NE-1002A, Revision 1, SER dated October 1, 1985.

3. Oconee Nuclear Station Reload Design Methodology, NFS-1001A, Revision 5, SER dated December 8, 2000.

4. ONS Core Thermal Hydraulic Methodology Using VIPRE-01, DPC-NE-2003P-A, Revision 1, SER dated June 23, 2000.

5. Thermal Hydraulic Statistical Core Design Methodology, DPC-NE-2005P-A, Revision 2, SER dated June 8, 1999.

6. Fuel Mechanical Reload Analysis Methodology Using TACO3, DPC-NE-2008P-A, SER dated April 3, 1995.

7. UFSAR Chapter 15 Transient Analysis Methodology, DPC-NE-3005-PA, Revision 1, SER dated May 25, 1999.

8. DPC-NE-3000P-A, Thermal Hydraulic Transient Analysis Methodology Rev.2, SER dated October 14, 1998.

9. BAW-10192-PA, BWNT LOCA - BWNT Loss of Coolant Accident Evaluation Model for Once-Through Steam Generator Plants, SER dated February 18, 1997.

10. BAW-10227-PA, Evaluation of Advanced Cladding and Structural Material (M5) in PWR Reactor Fuel, SER dated February 4, 2000.

11. Variable Low Pressure Safety Limit, OSC-4048, Revision 4, January 2001.

12. Power Imbalance Safety Limits and Tech Spec Setpoints Using Error Adjusted Flux-Flow Ratio of 1.094, OSC-5604, Revision 2, October 2001.

13. ΔTc and EOC Reduced Tavg Operation, OSC-7265, Rev. 1, Duke Power Co., June 2002.

14. O3C21 Maneuvering Analysis, OSC-8178, Revision 6, September 2004.

15. O3C21 Specific DNB Analysis, OSC-8220, Revision 0, October 2002.

16. O3C21 Reload Safety Evaluation, OSC-8400, Revision 1, November 2003.

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Oconee 3 Cycle 21

Steady State Operating Band

EFPD	Rod Index Min	Max	APSR %WD Min	Max
0 to 494	292 ± 5	300	30	40

Quandrant Power Tilt Setpoints

Core Power Level, %FP	Steady State 30 - 100	0 - 30	Transient 30 - 100	0 - 30	Maximum 0 - 100
Full Incore	3.50	7.57	7.07	9.36	16.51
Out of Core	2.39	6.09	5.63	7.72	14.22
Backup Incore	2.26	3.87	3.63	4.81	10.07

Referred to by ITS 3.2.3.

Correlation Slope (CS)

1.15

Referred to by ITS 3.3.1 (SR 3.3.1.3).

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