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U. S. Nuclear Regulatory Commission
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Subject: Oconee Nuclear Site Docket No. 50-270
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 2, Cycle 20, Rev. 18.

Very truly yours,

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

Attachment

A001

NRC Document Control Desk
November 13, 2002
Page 2

xc w/att: Mr. L. A. Reyes, 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

Duke Power Company

Oconee 2 Cycle 20

Core Operating Limits Report
FOR INFORMATION ONLY

QA Condition 1

~~Not Reviewed or Approved by CFAM 3.13~~

REVIEWED AND APPROVED BY CFAM 3.13

REVIEWED AND APPROVED BY CFAM 3.13

Prepared By : L. D. McClain L. D. McClain

Date : 30 Oct 2002

Checked By : D. W. Harris D. W. Harris

Date : Oct 30, 2002

CDR By : M. E. Henshaw M. E. Henshaw

Date : 10/30/02

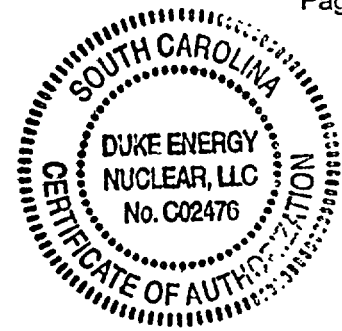
Approved By : R. R. St. Clair R. R. St. Clair

Date : 10/30/02



L. Dewain McClain
30 Oct 2002

Oconee 2 Cycle 20
Core Operating Limits Report



Insertion Sheet for Revision 18

This revision is not valid until the end of operation for Oconee 2 Cycle 19.

Remove these revision 17 pages

1-3, 14, 16, 24, 30

Insert these revision 18 pages

1-3, 14, 16, 24, 30

Revision Log

Revision	Effective Date	Pages Revised	Pages Added	Pages Deleted	Total Effective Pages
Oconee 2 Cycle 20 revisions below					
18	Oct 2002	1-3,14,16,24,30	-	-	32
17	Oct 2002	1 - 31	32	-	32
Oconee 2 Cycle 19 revisions below					
16	May 2001	1 - 31	-	-	31
Oconee 2 Cycle 18 revisions below					
15	Apr 2001	1-4	-	-	31
14	Feb 2000	1-4	-	-	31
13	Nov 1999	1-31	-	-	31
12	Sep 1999	1-31	-	-	31
11	Apr 1999	1-4, 6	-	-	31
10	Mar 1999	1-31	-	-	31

Oconee 2 Cycle 20

1.0 Error Adjusted Core Operating Limits

The Core Operating Limits Report for O2C20 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 O2C20 by references 14 through 16. The O2C20 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 (F_z) of 1.5, and an EOC (< 100 ppmB) Tav_g reduction of up to 10 °F provided 4 RCPs are in operation and Tav_g does not decrease below 569 °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 O2C20 reload core.

1.1 References

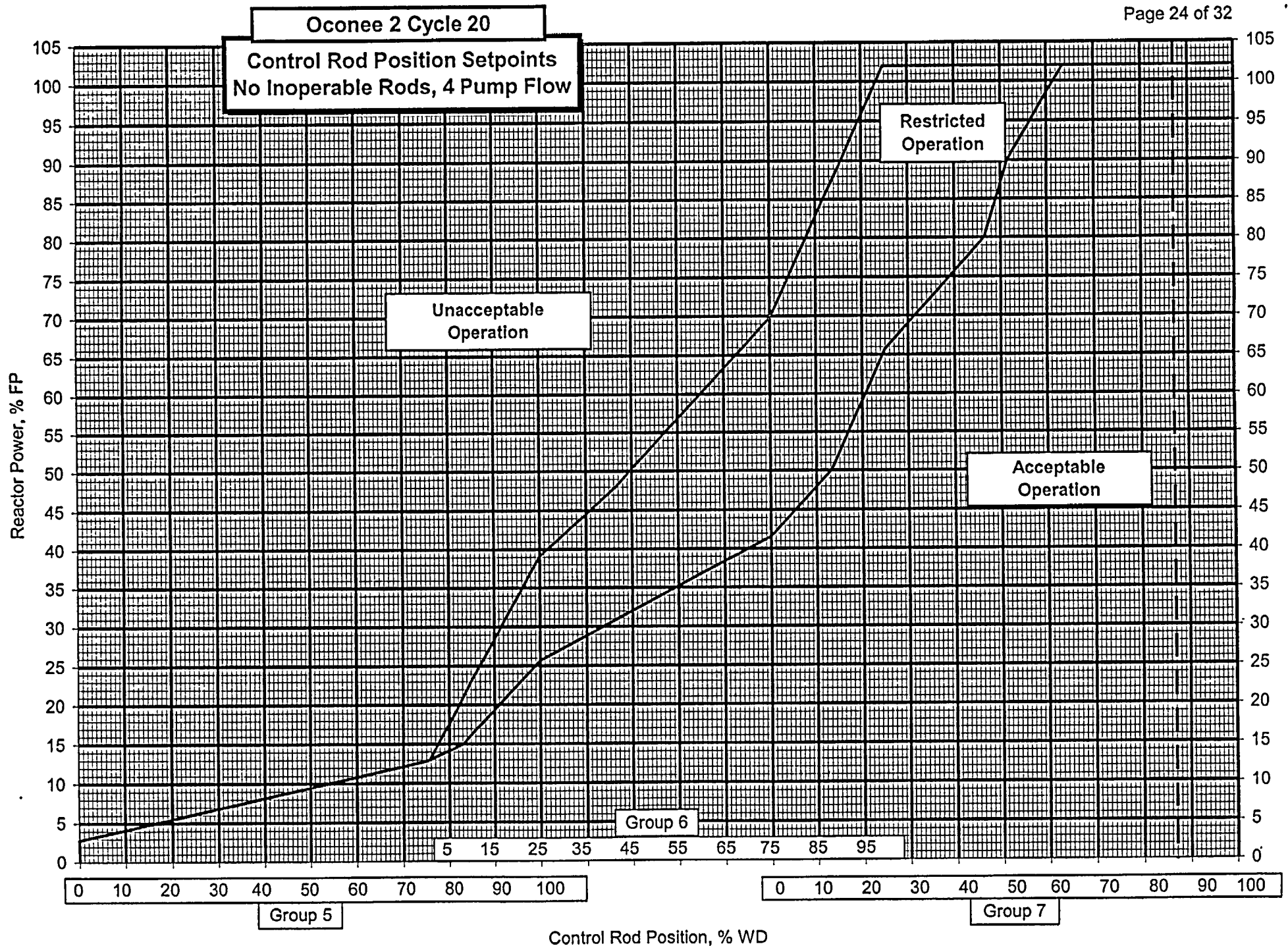
1. Nuclear Design Methodology Using CASMO-3 / SIMULATE-3P, DPC-NE-1004P-A, Revision 0, SER dated November 23, 1992.
2. Oconee Nuclear Station Reload Design Methodology II, DPC-NE-1002A, Revision 1, SER dated October 1, 1985.
3. Oconee Nuclear Station Reload Design Methodology, NFS-1001A, Revision 5, 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 3, July 1998.
12. Power Imbalance Safety Limits and Tech Spec Setpoints Using Error Adjusted Flux-Flow Ratio of 1.094, OSC-5604, Revision 1, November 1998.
13. ΔT_c and EOC Reduced Tav_g Operation, OSC-7265, Rev. 0, Duke Power Co., April 2001.
14. O2C20 Maneuvering Analysis, OSC-8082, Revision 2, October 2002.
15. O2C20 Specific DNB Analysis, OSC-8103, Revision 0, May 2002.
16. O2C20 Reload Safety Evaluation, OSC-8182, Revision 0, September 2002.

Oconee 2 Cycle 20

Operational Rod Index Setpoints

	%FP	RI Insertion Setpoint		RI Withdrawal Setpoint
		No Inop Rod	1 Inop Rod	
4 Pumps	102.0	263.5	286.5	300
	100.0	261.5	284.5	300
	90.0	251.5	274.3	300
	80.0	246.5	264.1	300
	50.0	201.5	233.5	300
	48.0	195.2	231.5	300
	15.0	91.5	165.5	300
	13.0	76.5	161.5	300
	5.0	16.5	93.5	300
	3.0	1.5	76.5	300
	2.8	0.0	74.8	300
	0.0	0.0	51.0	300
3 Pumps	77.0	237.5	285.2	300
	75.0	234.8	281.5	300
	50.0	201.5	235.2	300
	48.0	195.2	231.5	300
	15.0	91.5	165.5	300
	13.0	76.5	161.5	300
	5.0	16.5	93.5	300
	3.0	1.5	76.5	300
	2.8	0.0	74.8	300
	0.0	0.0	51.0	300

% FP	Shutdown Margin Setpoint			Operational Alarm Setpoint		
	CRGP 5	CRGP 6	CRGP 7	CRGP 5	CRGP 6	CRGP 7
102	100	99.8	24.8	100	100	63.5
101	100	99.0	24.0	100	100	62.5
100	100	98.2	23.2	100	100	61.5
99	100	97.5	22.5	100	100	60.5
98	100	96.7	21.7	100	100	59.5
97	100	95.9	20.9	100	100	58.5
96	100	95.2	20.2	100	100	57.5
95	100	94.4	19.4	100	100	56.5
94	100	93.6	18.6	100	100	55.5
93	100	92.9	17.9	100	100	54.5
92	100	92.1	17.1	100	100	53.5
91	100	91.3	16.3	100	100	52.5
90	100	90.6	15.6	100	100	51.5
89	100	89.8	14.8	100	100	51.0
88	100	89.0	14.0	100	100	50.5
87	100	88.2	13.2	100	100	50.0
86	100	87.5	12.5	100	100	49.5
85	100	86.7	11.7	100	100	49.0
84	100	85.9	10.9	100	100	48.5
83	100	85.2	10.2	100	100	48.0
82	100	84.4	9.4	100	100	47.5
81	100	83.6	8.6	100	100	47.0
80	100	82.9	7.9	100	100	46.5
79	100	82.1	7.1	100	100	45.0
78	100	81.3	6.3	100	100	43.5
77	100	80.6	5.6	100	100	42.0
76	100	79.8	4.8	100	100	40.5
75	100	79.0	4.0	100	100	39.0
74	100	78.2	3.2	100	100	37.5
73	100	77.5	2.5	100	100	36.0
72	100	76.7	1.7	100	100	34.5
71	100	75.9	0.9	100	100	33.0
70	100	75.2	0.2	100	100	31.5
69.8	100	75.0	0	100	100	31.2
69	100	73.8	0	100	100	30.0
68	100	72.3	0	100	100	28.5
67	100	70.7	0	100	100	27.0
66	100	69.2	0	100	100.0	25.5
65.7	100	68.7	0	100	100.0	25.0
65	100	67.7	0	100	99.5	24.5
64	100	66.1	0	100	98.8	23.8
63	100	64.6	0	100	98.0	23.0
62	100	63.0	0	100	97.2	22.2
61	100	61.5	0	100	96.5	21.5
60	100	60.0	0	100	95.8	20.8
59	100	58.4	0	100	95.0	20.0
58	100	56.9	0	100	94.2	19.2
57	100	55.3	0	100	93.5	18.5
56	100	53.8	0	100	92.8	17.8
55	100	52.3	0	100	92.0	17.0
54	100	50.7	0	100	91.2	16.2
53	100	49.2	0	100	90.5	15.5
52	100	47.7	0	100	89.8	14.8
51	100	46.1	0	100	89.0	14.0
50	100	44.6	0	100	88.2	13.2
% FP	CRGP 5	CRGP 6	CRGP 7	CRGP 5	CRGP 6	CRGP 7
	Shutdown Margin Setpoint			Operational Alarm Setpoint		



Oconee 2 Cycle 20

Rod Index Limits

Referred to by ITS 3.2.1

Not for Plant Use

	%FP	Operational RI Insertion Limit	Shutdown Margin RI No Inop Rod	RI Insertion Limit 1 Inop Rod	RI Withdrawal Limit
4 Pumps	102	262	220	283	300
	100	260	-	-	300
	90	250	-	-	300
	80	245	-	-	300
	50	200	140	230	300
	15	90	75	160	300
	5	0	0	75	300
3 Pumps	77	236	220	280	300
	50	200	140	230	300
	15	90	75	160	300
	5	0	0	75	300