DUKE POWER COMPANY

OCONEE 2 CYCLE 15

CORE OPERATING LIMITS REPORT

REVISION 4

QA CONDITION 1

REFERENCE OSC-5785

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Oconee Nuclear Station

Unit 2 Cycle 15

Core Operating Limits Report

Insertion Sheet for Revision 4

Remove these Revision 3 pages	**Insert these Revision 4 pages**
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Oconee Nuclear Station

Unit 2 Cycle 15

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Revision Log

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0	September 30, 1994	-	1-34	-	34
1	January 30, 1995	1-3, 13, 20, 23-26	-	-	34
2	March 9, 1995	1-3, 13, 20, 23-26	-	-	34
3	September 1995	1-3, 12	-	-	34
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1.0 CORE OPERATING LIMITS

This Core Operating Limits Report for O2C15 has been prepared in accordance with the requirements of Technical Specification 6.9. The core operating limits within this report have been developed using NRC-approved methodology (References 1, 2, 3, and 4). The RPS protective limits and maximum allowable setpoints are documented in References 6 and 7, and validated in References 5 and 8 for O2C15. Operational limits and requirements are documented in Reference 5. The reactor coolant system design flow used in References 5 and 8 for O2C15 is 107.5 % (of 88,000 gpm per pump). The core operating limits have been developed with a radial local peaking factor ($F^N_{\Delta H}$) of 1.714 and an axial peaking factor (F^N_Z) of 1.5.

The following cycle-specific core operating limits are included in this report. All computations performed in setting these limits used the approved SIMULATE methodology.

1) RPS protective limits (Figures 1.1 and 1.2), and RPS maximum allowable setpoints (Figures 1.3 and 1.4),

2) Quadrant power tilt operational limits,

3) Steady state operating band,

4) Power-imbalance operational limits,

5) Rod index operational and shutdown margin-restricted limits, and

6) BWST, SFP, CBAST, and CFT boron requirements.

1.1 REFERENCES

1) DPCo, Nuclear Design Methodology Using CASMO-3 / SIMULATE-3P, DPC-NE-1004A, November 1992.

2) DPCo, Oconee Nuclear Station, Reload Design Methodology II, DPC-NE-1002A, October 1985.

3) DPCo, Oconee Nuclear Station, Reload Design Methodology, NFS-1001A, April 1984.

4) DPC-NE-2003A, Oconee Nuclear Station Core Thermal Hydraulic Methodology Using VIPRE-01, July 1989.

5) O2C15 Maneuvering Analysis, DPCo calculational file, OSC-5785, September 1994.

6) Variable Low Pressure Safety Limit, DPCo calculational file, OSC-4048, Revision 0, July 1990.

7) Power-Imbalance Safety Limits and Tech. Spec. Setpoints Using Error-Adjusted Flux-Flow Ratio of 1.094, DPCo calculational file, OSC-5604, Revision 0, November 1993.

8) O2C15 Thermal-Hydraulic Evaluation, DPCo calculational file, OSC-5808, Revision 0, August 1994.

Oconee 2 Cycle 15

BWST, SFP, CBAST, and CFT BORON REQUIREMENTS

0 EFPD to EOC

1) The BWST boron concentration shall be greater than 2210 ppm[1] and less than 3000 ppm[2] (referred to by Tech Spec 3.3.4).

2) The Spent Fuel Pool boron concentration shall be greater than 2210 ppm[1] and less than 3000 ppm[2] (referred to by Tech Spec 3.8.15).

3) The equivalent of at least 1100 cubic feet of 11,000 ppm boron[3] shall be maintained in the CBAST (referred to by Tech Spec 3.2.2).

4) The boron concentration in each CFT shall be greater than 1835 ppm[4] (referred to by Tech Spec 3.3.3).

5) The refueling canal boron concentration shall be greater than 2210 ppm[1] (referred to by the bases to Tech Spec 3.8.4). This concentration is large enough to maintain 1% Dk/k shutdown margin with all control rods out of the core at temperatures down to 33 deg F, and with no credit for xenon worth. There is no upper limit on the refueling canal boron concentration.

Note that in the event that the refueling boron should fall below 2210 ppm, the criticality calculations would need to be re-evaluated.

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[1]Oconee Nuclear Station Technical Specifications Bases 3.3.4.b, Through Amendment Number 200/200/197, May 1993.

[2]BORCON Code Certification and Post-LOCA Core Boron Concentration Calculation, OSC-4040, July 1990.

[3]O2C15 Reload Safety Evaluation, OSC-5843, DPCo, November 1994.

[4]Post-LOCA Subcriticality Analysis and O3C15 Reload Safety Evaluation and 50.59, OSC-5643, January 1994.