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Technical Specification 6.9.1.f.4

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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

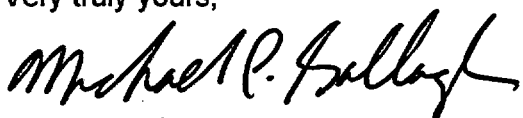
Subject: Core Operating Limits Report, Revision 15

Oyster Creek Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Enclosed with this cover letter is the approved Oyster Creek Generating Station Core Operating Limits Report, Revision 15, for operating Cycle 19. This report has been reviewed as required by the Oyster Creek Technical Specifications.

If you should require any further information, please contact Mr. David Distel at (610) 765-5517.

Very truly yours,



Michael P. Gallagher
Director – Licensing & Regulatory Affairs
AmerGen Energy Company, LLC

Enclosure: Oyster Creek Generating Station Cycle 19 Core Operating Limits Report,
Topical Report-066, Revision 15

cc: H. J. Miller, Administrator, USNRC Region I
P. S. Tam, USNRC, Senior Project Manager
S. Dennis, USNRC, Senior Resident Inspector
File No. 02007

Adm



Oyster Creek Cycle 19
Core Operating Limits Report
Topical Report - 066
Rev. 15

BA Number 335400

| May 2003

| Author: M. P. Hynes

Approved:

A handwritten signature in black ink, appearing to read "Jim Tusan", is written over a horizontal line.

Manager
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05-29-03
Date

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A handwritten signature in black ink, appearing to read "R. L. DiPasso", is written over a horizontal line.

Director
Nuclear Fuel Management

06/03/03
Date

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INTRODUCTION

Generic Letter 88-16 provides guidance for Technical Specification Changes concerning cycle-specific limits. The generic letter provides a vehicle for the removal of cycle specific parameters from the Technical Specifications and the maintenance of these values within a Core Operating Limits Report (COLR). The Technical Specification modification also establishes reporting requirements and includes definitions supporting the proposed changes. The COLR, including mid-cycle revisions, will be provided for each reload cycle.

This COLR has been prepared in accordance with the requirements of OC Technical Specification 6.9.1.f. The Cycle 19 fuel/core operating limits were generated using the NRC-approved codes and methodologies identified in Reference 9. The information in this report is taken from references 11 through 14.

For each GE fuel design, the APLHGR limits provided in the COLR for operation with less than five loops are calculated to be the same as the five-loop limits at all exposure levels provided a non-operating loop is not an ISOLATED RECIRCULATION LOOP. If a non-operating loop is ISOLATED (both the suction and discharge valves are in the closed position as defined in References 6 and 14), then a 0.98 MAPHLGR multiplier must be applied at all exposure levels. Only one ISOLATED non-operating loop is permitted. Requirements for operation with recirculation loops out-of-service are provided in Technical Specification 3.3.F.2.

The LLHGR limits are implemented on a fuel rod exposure dependent basis. Figure 7 shows the maximum value of the LLHGR limit. The exposure dependent LLHGR values are contained reference 13 for the GE9B fuel, and in reference 12 for the GE11 fuel.

The CPR limits in Figure 5 are differentiated based on the number of recirculation loops in service; one set of limits applies to the condition of five or four loops in service, while the other set applies to the condition of three loops in service. Cycle exposure dependent limits are provided for each condition. The limits cover operation at any point in the cycle with increased core flow up to 67.5 Mlb/hr, feedwater temperature reduction of up to 105 °F, and operation in the extended load line limit analysis (ELLLA) region.

During power operation thermal margins should be maintained within the specified limits. If at any time during power operation it is determined by normal surveillance that the limiting value for APLHGR (Figures 1, 2, 3 and 4), LLHGR (Figure 7) or CPR (Figure 5) is being exceeded, action shall be initiated to restore operation to within the prescribed limits as specified in Technical Specification Section 3.10.

REFERENCES

1. Deleted
2. Deleted
3. Deleted
4. Deleted
5. Deleted
6. "Oyster Creek NGS SAFER/CORECOOL/GESTR-LOCA Loss-of-Coolant Accident Analysis," NEDE-31462P August 1987
7. Deleted
8. Deleted
9. "General Electric Standard Application for Reload Fuel," NEDE-24011-P-A-14 June 2000 and U.S. Supplement, NEDE-24011-P-A-14-US, June 2000.
10. Deleted
11. 000000055032-SRLR, "Supplemental Reload Licensing Report for Oyster Creek Reload 18 Cycle 19", Revision 2, May 2003.
12. 000000055032-FBIR, "Fuel Bundle Information Report for Oyster Creek Reload 18 Cycle 19", Revision 0, September 2002.
13. GNF-e0000-0007-5877, "Improved LHGR Limits for GE9B Fuel in Oyster Creek", September 2002.
14. GE-NE-0000-0001-7486-01P, "Oyster Creek Generating Station Loss of Coolant Accident Evaluation for GE11", July 2002.

FIGURE 1

GE9B-P8DWB348-12GZ-80M-145-T
MAPLHGR LIMITS

Technical Specification 3.10.A

DATA POINTS

ALL LATTICES

Exposure GWD/MT	KW/FT
0.20	10.88
1.10	10.98
5.50	11.30
8.80	11.28
11.00	11.19
13.80	11.11
16.50	10.79
19.30	9.99
22.00	9.89
27.60	9.86
38.60	9.63
49.60	9.69
60.60	9.59
71.70	9.61

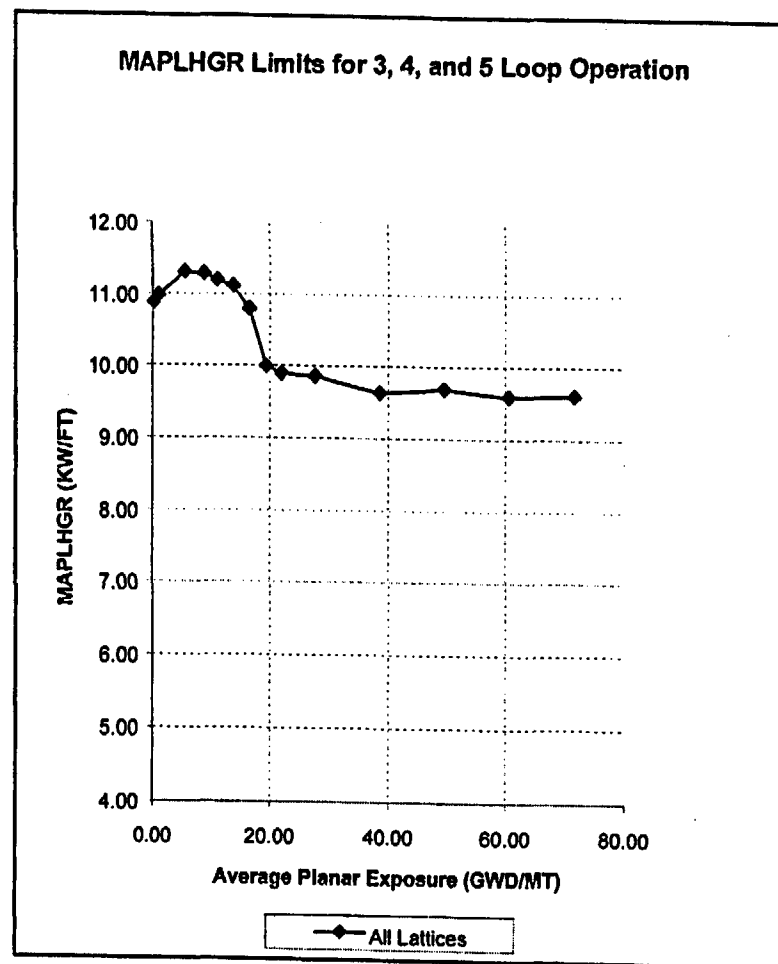


FIGURE 2

GE9B-P8DWB338-11GZ-80M-145-T
MAPLHGR LIMITS

Technical Specification 3.10.A

DATA POINTS

ALL LATTICES

Exposure GWD/MT	KW/FT
0.20	10.93
1.10	11.03
5.50	11.37
8.80	11.29
11.00	11.11
13.80	11.11
16.50	10.68
19.30	9.96
22.00	9.86
27.60	9.83
38.60	9.63
49.60	9.68
60.60	9.60
71.70	9.67

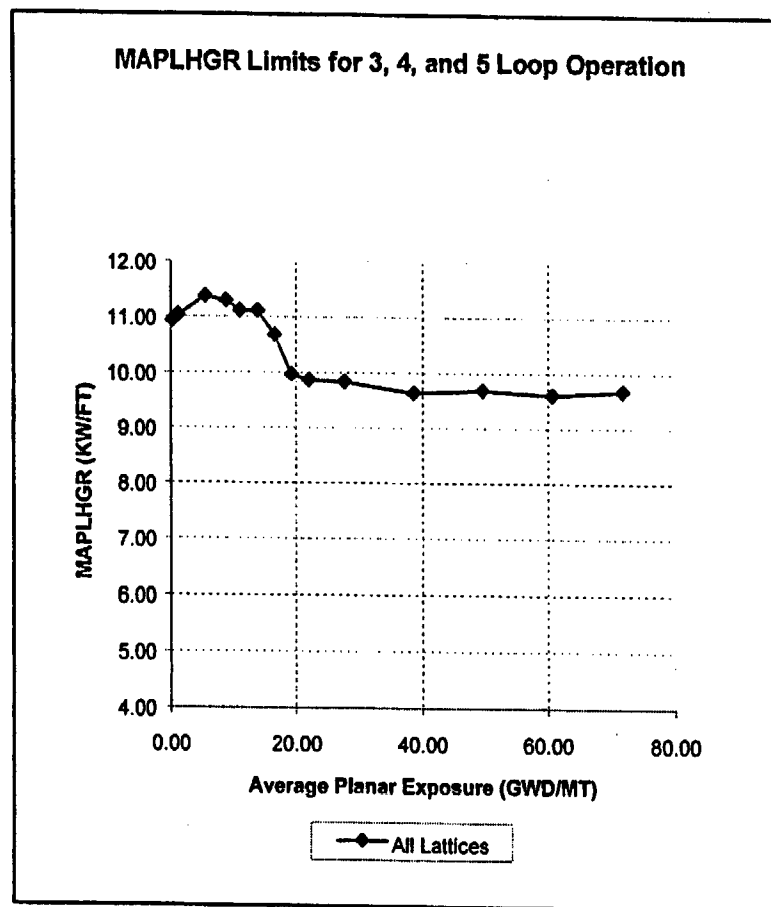


FIGURE 3

GE11B-P9HUB374-13GZ-100T-145-T6-2559
MAPLHGR LIMITS

Technical Specification 3.10.A

DATA POINTS

Exposure GWD/MT	LATTICES			
	PSZ KW/FT	DOM KW/FT	SDZ KW/FT	NATU KW/FT
0.20	9.83	9.78	9.83	9.83
1.10	9.81	9.73	9.81	9.81
5.50	9.65	9.62	9.65	9.65
11.00	9.52	9.52	9.52	9.52
16.50	9.46	9.45	9.46	9.46
22.00	9.23	9.22	9.23	9.23
27.60	8.46	8.43	8.46	8.46
38.60	8.17	8.16	8.17	8.17
49.60	8.19	8.24	8.19	8.19
60.60	8.02	8.02	8.02	8.02
71.70	7.54	7.54	7.54	7.54

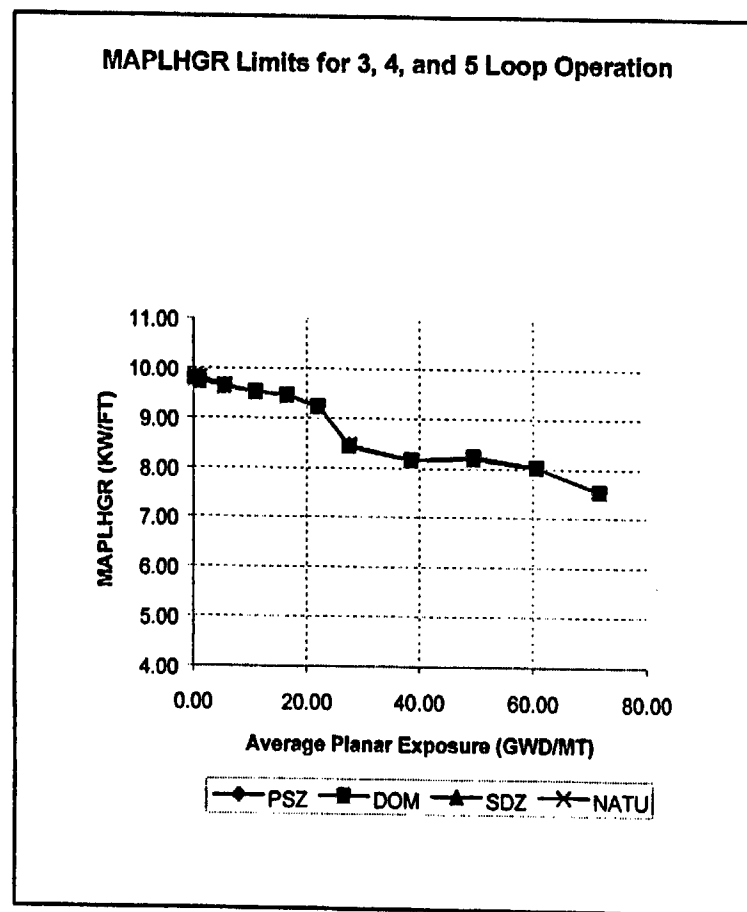


FIGURE 4

GE11B-P9HUB369-12GZ-100T-145-T6-2560
MAPLHGR LIMITS

Technical Specification 3.10.A

DATA POINTS

Exposure GWD/MT	LATTICES			
	PSZ KW/FT	DOM KW/FT	SDZ KW/FT	NATU KW/FT
0.20	10.10	10.11	10.10	10.10
1.10	10.05	10.04	10.05	10.05
5.50	9.96	9.88	9.96	9.96
11.00	9.76	9.72	9.76	9.76
16.50	9.64	9.64	9.64	9.64
22.00	9.27	9.25	9.27	9.27
27.60	8.56	8.56	8.56	8.56
38.60	8.25	8.26	8.25	8.25
49.60	8.35	8.36	8.35	8.35
60.60	7.99	7.98	7.99	7.99
71.70	7.51	7.51	7.51	7.51

MAPLHGR Limits for 3, 4, and 5 Loop Operation

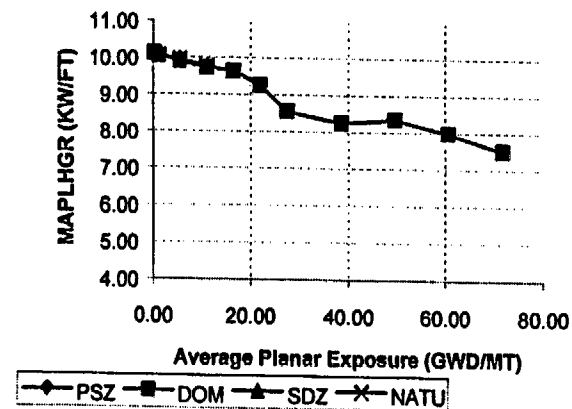


FIGURE 5**MINIMUM CRITICAL POWER RATIO (MCPR) - Tech Spec 3.10.C****MCPR Limits for Five or Four Recirculation Loops in Service**

APRM STATUS	BOC to EOR-2205 MWD/MT ⁽¹⁾	EOR-2205 MWD/MT to EEOC ⁽²⁾
1. If any two (2) LPRM assemblies which are input to the APRM system and are separated in distance by less than three (3) times the control rod pitch contain a combination of three (3) out of four (4) detectors located in either the A and B or C and D levels which are failed or bypassed (i.e., APRM channel or LPRM input bypassed or inoperable)	1.51	1.53
2. If any LPRM input to the APRM system at the B, C, or D level is failed or bypassed or any APRM channel in inoperable (or bypassed).	1.51	1.53
3. All B, C, and D LPRM inputs to the APRM system are operating and no APRM channels are inoperable or bypassed.	1.51	1.53

MCPR Limits for Three Recirculation Loops in Service

APRM STATUS	BOC to EOR-2205 MWD/MT ⁽¹⁾	EOR-2205 MWD/MT to EEOC ⁽²⁾
1. If any two (2) LPRM assemblies which are input to the APRM system and are separated in distance by less than three (3) times the control rod pitch contain a combination of three (3) out of four (4) detectors located in either the A and B or C and D levels which are failed or bypassed (i.e., APRM channel or LPRM input bypassed or inoperable)	1.52	1.54
2. If any LPRM input to the APRM system at the B, C, or D level is failed or bypassed or any APRM channel in inoperable (or bypassed).	1.52	1.54
3. All B, C, and D LPRM inputs to the APRM system are operating and no APRM channels are inoperable or bypassed.	1.52	1.54

Notes:

- (1) Limit applies in the cycle exposure range from beginning of cycle (BOC) until 2205 MWD/MT prior to end of rated (EOR). EOR is defined as the cycle exposure point where all rods out at rated power and flow occurs with all feedwater heaters in service.
- (2) Limit applies in the cycle exposure range from 2205 MWD/MT prior to EOR to extended end of cycle (EEOC). EEOC includes cycle extension options used beyond EOR (increased core flow, feedwater temperature reduction, and coastdown).

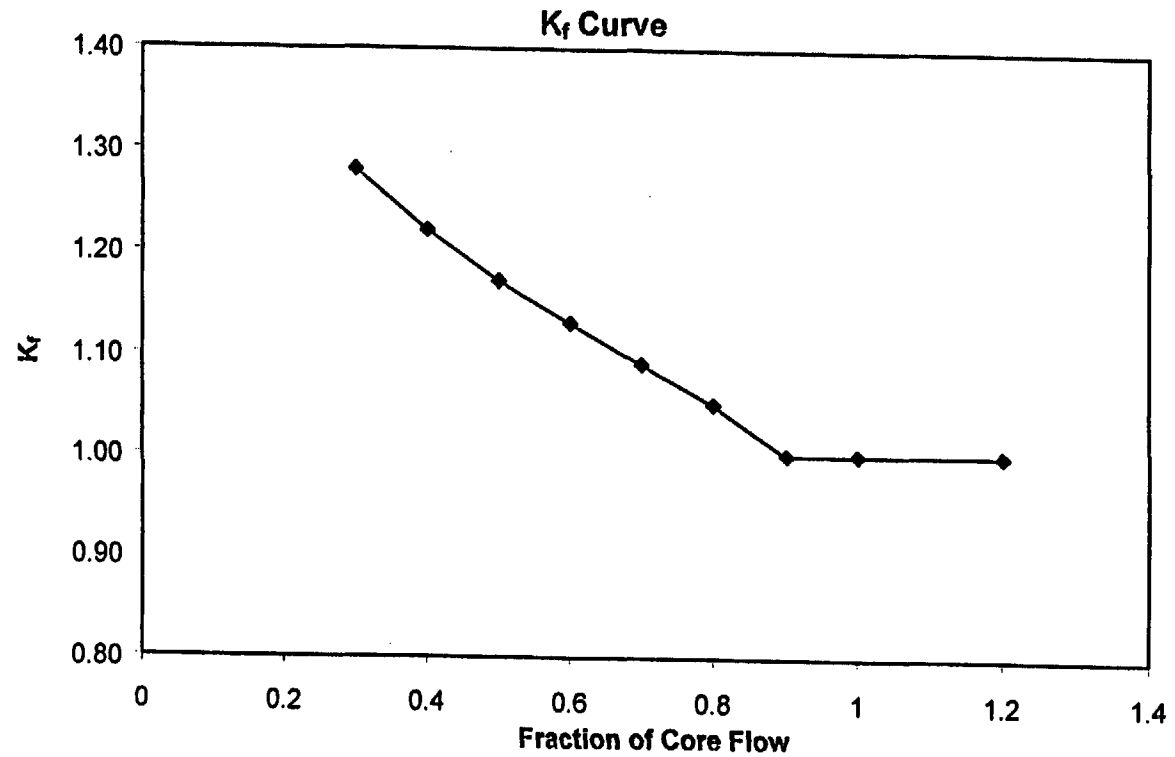
FIGURE 6

Technical Specification 3.10.C

DATA POINTS

FLOW	K _f
0.3	1.28
0.4	1.22
0.5	1.17
0.6	1.13
0.7	1.09
0.8	1.05
0.9	1.00
1	1.00
1.2	1.00

Flowmax =117%



NOTE: For Fraction of Core Flow (FCF) less than 0.40 the following adjustment factor must be applied to the curve: $1.0 + (0.32)(1.22)(0.40 - \text{FCF})$

FIGURE 7

LOCAL LINEAR HEAT GENERATION RATE (LLHGR) - Tech Spec 3.10.B

<u>FUEL TYPE</u>	<u>LLHGR Limit</u>
GE8x8NB	≤ 13.4 kw/ft
GE11	≤ 11.0 kw/ft