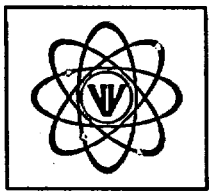
Vermont Yankee Nuclear Power Station
Cycle 21
Core Operating Limits Report
Revision 0



November 1999

Preparer	Reactor Engineer	11/16/99 Date
Reviewed	Reactor Engineer	11/16/99 Date
Approved	Reactor Engineering Manager	11/16/99 Date
Reviewed	Plant Operations Review Committee 99-72	11/17/99 Date
Approved	Plant Manager	11/23/99 Date
Approved	Director of Operations	11/24/99 Date

REVISION RECORD

Cycle	Revision	Date	Description
21	0	11/99	Cycle 21 revision. Reviewed by PORC and approved by management.

ABSTRACT

This report presents the cycle-specific operating limits for the operation of Cycle 21 of the Vermont Yankee Nuclear Power Station. The limits are the maximum average planar linear heat generation rate, maximum linear heat generation rate, minimum critical power ratio, and thermal-hydraulic stability exclusion region.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

This report provides the cycle-specific limits for operation of the Vermont Yankee Nuclear Power Station in Cycle 21. It includes the limits for the maximum average planar linear heat generation rate, maximum linear heat generation rate, minimum critical power ratio, and thermal-hydraulic stability exclusion region. If any of these limits are exceeded, action will be taken as defined in the Technical Specifications.

This Core Operating Limits report for Cycle 21 has been prepared in accordance with the requirements of Technical Specifications 6.6.C. The core operating limits have been developed using the NRC-approved methodologies listed in References 1 through 3. The methodologies are also listed in Technical Specification 6.6.C. The bases for these limits are in References 5 through 8.

2.0 CORE OPERATING LIMITS

The Cycle 21 operating limits have been defined using NRC-approved methodologies. Cycle 21 must be operated within the bounds of these limits and all others specified in the Technical Specifications.

2.1 Maximum Average Planar Linear Heat Generation Rate Limits (T.S. 3.11.A)

During steady-state power operation, the Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) for each fuel type, as a function of the average planar exposure, shall not exceed the limiting values shown in Tables 2.1-1 through 2.1-7. For single recirculation loop operation, the limiting values shall be the values from these Tables listed under the heading "Single Loop Operation." These values are obtained by multiplying the values for two loop operation by 0.82 (Reference 5). The source of these values is identified on each table. These tables only list the limits for fuel types in Cycle 21.

The MAPLHGR values are usually the most limiting composite of the fuel thermal-mechanical design analysis MAPLHGRs and the Loss-of-Coolant Accident (LOCA) MAPLHGRs. The fuel thermal-mechanical design analysis, using the methods in Reference 1, demonstrates that all fuel rods in a lattice, operating at the bounding power history, meet the fuel design limits specified in Reference 1. The Vermont Yankee LOCA analysis, performed in conformance with the requirements of 10CFR50.46 and Appendix K demonstrates that the LOCA analysis MAPLHGR values are bounded at all exposure points by the thermal-mechanical design analysis MAPLHGR values.

The MAPLHGR actually varies axially, depending upon the specific combination of enriched uranium and gadolinia that comprises a fuel bundle cross section at a particular axial node. Each particular combination of enriched uranium and gadolinia is called a lattice type. Each lattice type has a set of MAPLHGR values that vary with fuel burnup. The process computer will verify that these lattice MAPLHGR limits are not violated. Tables 2.1-1 through 2.1-7 provide a limiting composite of MAPLHGR values for each fuel type, which envelope the lattice MAPLHGR values employed by the process computer. When hand calculations are required, these MAPLHGR values are used for all lattices in the bundle.

2.2 Minimum Critical Power Ratio Limits (T.S. 3.11.C)

During steady-state power operation, the Minimum Critical Power Ratio (MCPR) shall be equal to, or greater than, the limits shown in Table 2.2-1. The non-ICF MCPR limits are valid for rated power operation up to a cycle exposure of 11150 MWd/St, which is the licensed end of cycle exposure. The ICF MCPR limits are valid for rated power operation up to a cycle exposure of 11400 MWd/St, which is the licensed extended end of cycle exposure. Either of these exposure values may be exceeded, provided the plant is coasting down. Coastdown operation is allowable down to 40% rated CTP.

For single recirculation loop operation, the MCPR limits at rated flow shall be the values from Table 2.2-1 listed under the heading, "Single Loop Operation." The single loop values are obtained by adding 0.02 to the two loop operation values (Reference 7).

For core flows other than the rated condition, the MCPR limit shall be the appropriate value from Table 2.2-1 multiplied by K_f, where K_f is given in Figure 2.2-1 as a function of the Recirc MG Set Stop setting. Interpolation between K_f curves is allowable, provided the curve used is conservative to the Recirc MG Set Stop setting.

Also listed is the maximum RBM rod block setpoint to which the designated MCPR limits apply. This value determines the RBM rod block clamp setpoint.

These limits are only valid for the fuel types in Cycle 21.

2.3 Maximum Linear Heat Generation Rate Limits (T.S. 3.11.8)

During steady-state power operation, the Linear Heat Generation Rate (LHGR) of any rod in any fuel bundle at any axial location shall not exceed the maximum allowable LHGR limits in Table 2.3-1. This table only lists the limits for fuel types in Cycle 21.

2.4 Thermal-Hydraulic Stability Exclusion Region (T.S. 3.6.J)

Normal plant operation is not allowed inside the bounds of the exclusion region defined in Figure 2.4-1, Reference 7. These power and flow limits are applicable for Cycle 21. Operation inside of the exclusion region may result in a thermal-hydraulic oscillation. Intentional operation within the buffer region is not allowed unless the Stability Monitor is operable. Otherwise, the buffer region is considered part of the exclusion region.

The coordinates of the Exclusion Region are as follows:

Point	Power (%)	Flow (%)
A	72.9	46.8
B	32.2	25.5

The equation for the boundary is as follows:

$$P_B = P_B\left(\frac{P_A}{P_B}\right)^{\frac{1}{2}\left[\frac{W-W_B}{W_A-W_B}+\left(\frac{W-W_B}{W_A-W_B}\right)^2\right]}$$

where,

P = a core thermal power value on the Exclusion Region boundary (% of rated),
W = the core flow rate corresponding to power, P, on the Exclusion Region boundary (% of rated),
P_A = core thermal power at State Point A (% of rated),
P_B = core thermal power at State Point B (% of rated),

W_A = core flow rate at State Point A (% of rated),
W_B = core flow rate at State Point B (% of rated),

The range of validity of the fit is: 25.5% $\leq$ %Flow $\leq$ 46.8%

The coordinates of the Buffer Region are as follows:

Point	Power (%)	Flow (%)
C	76.2	51.8
D	27.2	24.7

The generic equation used to generate the 5% buffer zone exclusion region boundary is:

$$P_D = P_D\left(\frac{P_C}{P_D}\right)^{\frac{1}{2}\left[\frac{W-W_D}{W_C-W_D}+\left(\frac{W-W_D}{W_C-W_D}\right)^2\right]}$$

where,

P = a core thermal power value on the Buffer Zone boundary (% of rated),
W = the core flow rate corresponding to power, P, on the 5% Buffer Zone boundary (% of rated),
P_C = core thermal power at State Point C (% of rated),
P_D = core thermal power at State Point D (% of rated),
W_C = core flow rate at State Point C (% of rated),
W_D = core flow rate at State Point D (% of rated),

The range of validity of the fit is: 24.7% $\leq$%Flow $\leq$51.8%.

2.5 Power/Flow Map

Power operation, with respect to Core Thermal Power/Total Core Flow combinations, is allowed within the boldly outlined area of Figure 2.4-1. This area is bounded by the following lines:

- Minimum Pump Speed Line; This line approximates operation at minimum pump speed. Plant start-up is performed with the recirculation pumps operating at approximately 20% speed. Reactor power level will approximately follow this line during the normal control rod withdrawal sequence.

- 5% Buffer Region Boundary; The Buffer Region is determined by adjusting the endpoints of the of the Exclusion Region and increasing the flow on the highest rod line by 5% and decreasing power on the natural circulation line by 5%. Operational restrictions regarding the Exclusion and Buffer Regions are described in Section 2.4.

- APRM Rod Block Line; This line provides a power and flow operation boundary assumed in transient and accident analyses. The equation for determining the Rod Block Line is given in Technical Specifications.

- Rated Power Line; This line provides an upper power limit assumed in transient analyses. The Rated Power line is equivalent to 1593 MW(th), or rated power for Vermont Yankee. The value is defined in the operating license and supplied in Technical Specifications.

- 107% Flow Line; This line represents the highest allowable analyzed core flow. The analysis in Reference 11 supports the maximum attainable core flow being approximately 107% of rated core flow.

- Minimum Power Line; This lines approximates the interlock that requires recirc pump speed to be at a minimum below 20% of feedwater flow. This interlock ensures NPSH requirements are met.

Additionally, up to approximately 20% Core Thermal Power, operation is allowed only at Minimum Pump Speed to ensure cavitation of Recirc Pumps and Jet Pumps does not occur.

Table 2.1-1

MAPLHGR Versus Average Planar Exposure for GE9B-BP8DWB335-10GZ-80M-150-T
Fuel Bundle No. 2017

Plant: Vermont Yankee

Fuel Type: P8DWB335-10GZ

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	11.29	9.25
200.00	11.34	9.29
1,000.00	11.48	9.41
2,000.00	11.69	9.58
3,000.00	11.92	9.77
4,000.00	12.17	9.97
5,000.00	12.43	10.19
6,000.00	12.68	10.39
7,000.00	12.87	10.55
8,000.00	13.06	10.70
9,000.00	13.24	10.85
10,000.00	13.35	10.94
12,500.00	13.20	10.82
15,000.00	13.01	10.66
20,000.00	12.27	10.06
25,000.00	11.43	9.37
35,000.00	9.88	8.10
45,000.00	8.38	6.87
50,590.00	5.65	4.63

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.1-2

MAPLHGR Versus Average Planar Exposure for GE9B-BP8DWB335-11GZ-80M-150-T
Fuel Bundle No. 2018

Plant: Vermont Yankee

Fuel Type: P8DWB335-11GZ

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	11.28	9.24
200.00	11.33	9.29
1,000.00	11.43	9.37
2,000.00	11.60	9.51
3,000.00	11.80	9.67
4,000.00	12.04	9.87
5,000.00	12.30	10.08
6,000.00	12.53	10.27
7,000.00	12.73	10.43
8,000.00	12.94	10.61
9,000.00	13.13	10.76
10,000.00	13.29	10.89
12,500.00	13.20	10.82
15,000.00	12.99	10.65
20,000.00	12.27	10.06
25,000.00	11.43	9.37
35,000.00	9.88	8.10
45,000.00	8.38	6.87
50,590.00	5.65	4.63

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.1-3

MAPLHGR Versus Average Planar Exposure for GE9B-BP8DWB354-12GZ-80U-150-T
Fuel Bundle No. 2153

Plant: Vermont Yankee

Fuel Type: P8DWB354-12GZ

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	10.96	8.98
200.00	11.04	9.05
1,000.00	11.18	9.16
2,000.00	11.40	9.34
3,000.00	11.63	9.53
4,000.00	11.81	9.68
5,000.00	12.01	9.84
6,000.00	12.14	9.95
7,000.00	12.26	10.05
8,000.00	12.37	10.14
9,000.00	12.46	10.21
10,000.00	12.52	10.26
12,500.00	12.40	10.16
15,000.00	12.10	9.92
20,000.00	11.40	9.34
25,000.00	10.72	8.79
35,000.00	9.44	7.74
45,000.00	7.24	5.93
48,200.00	5.67	4.65

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.1-4

MAPLHGR Versus Average Planar Exposure for GE13-P9HTB380-12GZ-100T-146-T
Fuel Bundle No. 2278

Plant: Vermont Yankee

Fuel Type: P9HTB380-12GZ

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	10.64	8.72
200.00	10.71	8.78
1,000.00	10.85	8.89
2,000.00	11.04	9.05
3,000.00	11.23	9.20
4,000.00	11.43	9.37
5,000.00	11.64	9.54
6,000.00	11.82	9.69
7,000.00	11.96	9.80
8,000.00	12.12	9.93
9,000.00	12.27	10.06
10,000.00	12.44	10.20
12,500.00	12.57	10.30
15,000.00	12.24	10.03
17,500.00	11.90	9.75
20,000.00	11.54	9.46
25,000.00	10.82	8.87
30,000.00	10.12	8.29
35,000.00	9.43	7.73
40,000.00	8.76	7.18
45,000.00	8.10	6.64
50,000.00	7.44	6.10
55,000.00	6.77	5.55
57,480.00	6.43	5.27
57,580.00	6.42	5.26

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.1-5

MAPLHGR Versus Average Planar Exposure for GE13-P9HTB379-13GZ-100T-146-T
Fuel Bundle No. 2279

Plant: Vermont Yankee

Fuel Type: P9HTB379-13GZ

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	10.64	8.72
200.00	10.69	8.76
1,000.00	10.81	8.86
2,000.00	10.99	9.01
3,000.00	11.18	9.16
4,000.00	11.36	9.31
5,000.00	11.49	9.42
6,000.00	11.63	9.53
7,000.00	11.78	9.65
8,000.00	11.92	9.77
9,000.00	12.07	9.89
10,000.00	12.22	10.02
12,500.00	12.33	10.11
15,000.00	12.23	10.02
17,500.00	11.90	9.75
20,000.00	11.54	9.46
25,000.00	10.82	8.87
30,000.00	10.11	8.29
35,000.00	9.42	7.72
40,000.00	8.75	7.17
45,000.00	8.09	6.63
50,000.00	7.43	6.09
55,000.00	6.76	5.54
57,500.00	6.42	5.26
57,560.00	6.40	5.24

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.1-6

MAPLHGR Versus Average Planar Exposure for GE13-P9HTB388-13GZ-100T-146-T
Fuel Bundle No. 2365

Plant: Vermont Yankee

Fuel Type: P9HTB388-13GZ

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	10.85	8.90
200.00	10.93	8.96
1,000.00	11.06	9.07
2,000.00	11.25	9.23
3,000.00	11.45	9.39
4,000.00	11.63	9.54
5,000.00	11.78	9.66
6,000.00	11.92	9.77
7,000.00	12.06	9.89
8,000.00	12.20	10.00
9,000.00	12.32	10.10
10,000.00	12.44	10.20
12,500.00	12.42	10.18
15,000.00	12.22	10.02
17,500.00	11.95	9.80
20,000.00	11.64	9.54
25,000.00	10.93	8.96
30,000.00	10.23	8.39
35,000.00	9.55	7.83
40,000.00	8.87	7.27
45,000.00	8.21	6.73
50,000.00	7.54	6.18
55,000.00	6.86	5.63
57,860.00	6.46	5.30

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.1-7

MAPLHGR Versus Average Planar Exposure for GE13-P9HTB388-13GZ1-100T-146-T
Fuel Bundle No. 2279

Plant: Vermont Yankee

Fuel Type: P9HTB388-13GZ1

Average Planar Exposure (MWd/ST)	MAPLHGR (kW/ft)	
	Two Loop Operation	Single Loop Operation[1]
0.00	10.75	8.82
200.00	10.82	8.87
1,000.00	10.93	8.96
2,000.00	11.08	9.09
3,000.00	11.25	9.23
4,000.00	11.42	9.36
5,000.00	11.56	9.48
6,000.00	11.68	9.58
7,000.00	11.81	9.68
8,000.00	11.94	9.79
9,000.00	12.08	9.91
10,000.00	12.21	10.01
12,500.00	12.24	10.04
15,000.00	12.11	9.93
17,500.00	11.88	9.74
20,000.00	11.61	9.52
25,000.00	10.88	8.92
30,000.00	10.19	8.36
35,000.00	9.53	7.81
40,000.00	8.86	7.27
45,000.00	8.19	6.72
50,000.00	7.53	6.17
55,000.00	6.85	5.62
57,850.00	6.45	5.29

Source: NEDC-32814P, Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA, Loss-of-Coolant Analysis, Reference 5. J11-03546MAPL, Revision 0, GE Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20 Cycle 21, Reference 8.

Technical Specification References: 3.6.G.1a and 3.11.A.

1 MAPLHGR for single loop operation is obtained by multiplying MAPLHGR for two loop operation by 0.82.

Table 2.2-1

Vermont Yankee Nuclear Power Station
Cycle 21 MCPR Operating Limits

Value of "N" in RBM Equation (A)[1]	Average Control Rod Scram Time	Cycle Exposure Range	Two Loop Operation	Single Loop Operation[2]
42%	Equal to or better than L.C.O. 3.3.C.1.1	0.0 to 8750 MWd/St	1.32	1.34
		8750 to 9750 MWd/St	1.33	1.35
		9750 to 11150 MWd/St[3]	1.36	1.38
		0.0 to 11400 MWd/St[3,4]	1.37	1.39
	Equal to or better than L.C.O. 3.3.C.1.2	0.0 to 8750 MWd/St	1.36	1.38
		8750 to 9750 MWd/St	1.37	1.39
		9750 to 11150 MWd/St[3]	1.46	1.48
		0.0 to 11400 MWd/St[3,4]	1.47	1.49

Maximum Allowable RBM Rod Block setpoint – 110% power.

Source: Report, Cycle Management Report for Vermont Yankee Nuclear Power Station Cycle 21, J11-03546CMR, Rev. 0, October 1999, Reference 6. Report, General Electric Nuclear Energy, Supplemental Reload Licensing Report for Vermont Yankee Nuclear Power Station Reload 20/Cycle 21, J11-03546SRLR, Rev. 0, September 1999, Reference 7.

Technical Specification References: 3.6.G.1a and 3.11.C.

1 The Rod Block Monitor (RBM) trip setpoints are determined by the equation shown in Table 3.2.5 of the Technical Specifications.

2 The MCPR operating limits should be increased by 0.02 for the single loop operation.

3 Exposure value is the limit for license rated power operation. Operation beyond this exposure is allowable, provided plant is coasting down. As recommended by General Electric, the variable limits are conservatively determined from CMR full power exposure capability while the end of cycle values are based on values given in the SRLR.

4 ICF MCPR Operating Limits listed are for operation at ICF conditions at any time during the cycle.

Table 2.3-1

Maximum Allowable Linear Heat Generation Rate Limits

Fuel Type	Maximum Allowable Linear Heat Generation Rate (kW/ft)
BP8DWB335-10GZ	14.4
BP8DWB335-11GZ	14.4
BP8DWB354-12GZ	14.4
P9HTB380-12GZ	14.4
P9HTB379-13GZ	14.4
P9HTB388-13GZ	14.4
P9HTB388-13GZ1	14.4

Source: NEDE-24011-P-A, Reference 1.

Technical Specification References: 2.1.A.1a, 2.1.B.1, and 3.11.B.

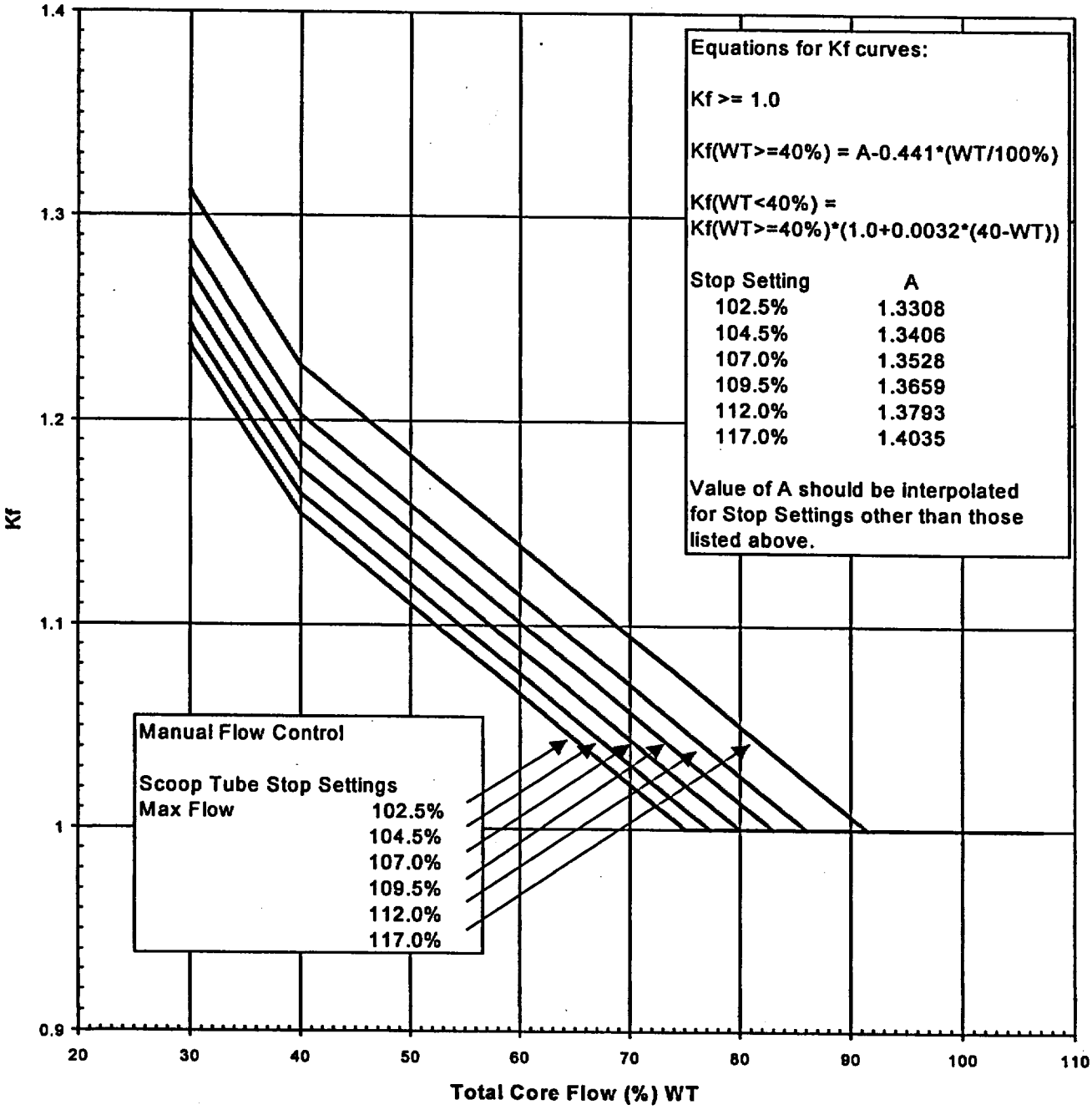


Figure 2.2-1

K_f vs. Total Core Flow
(Technical Specification Reference 3.11.C)

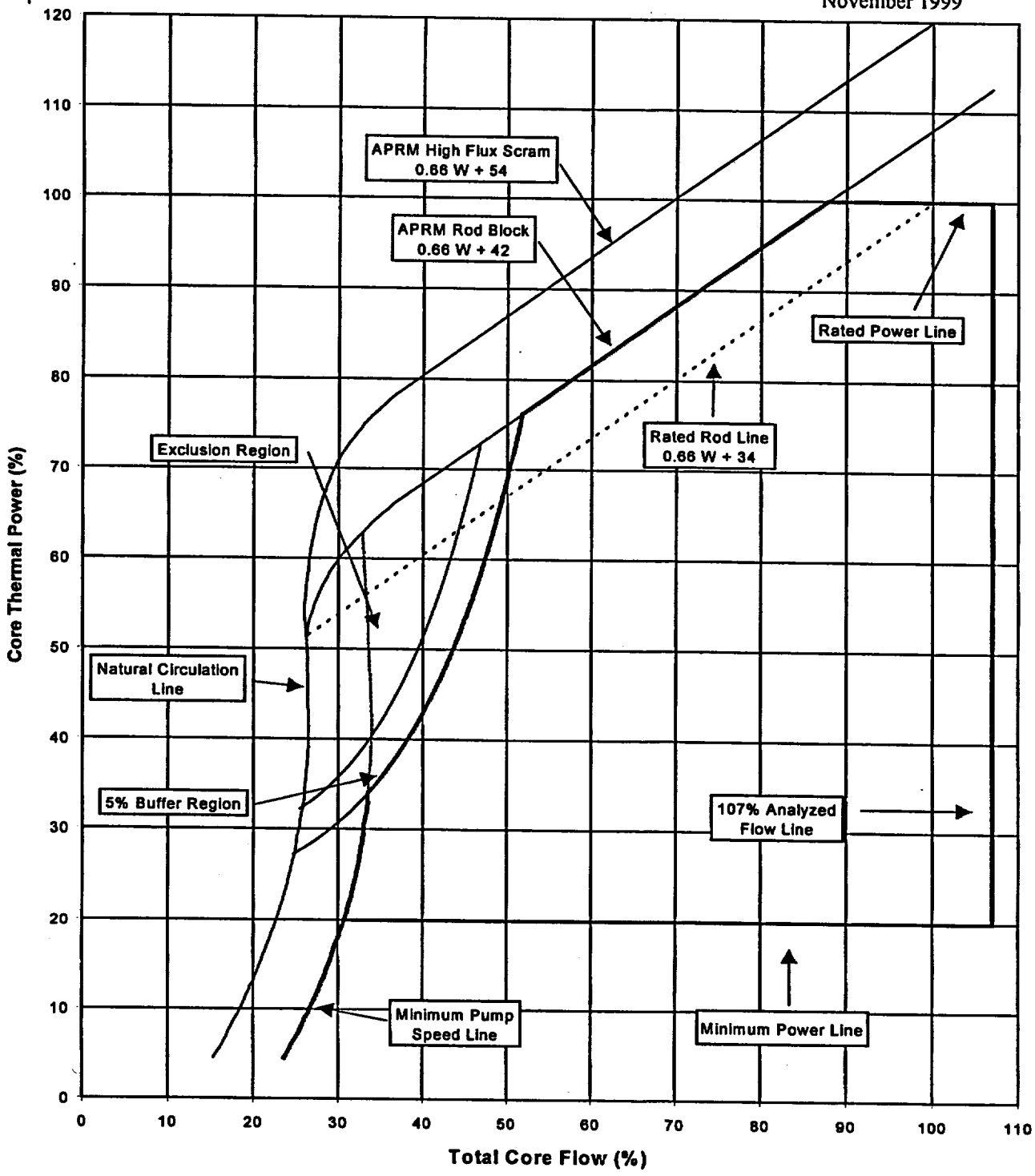


Figure 2.4-1

Limits of Power/Flow Operation
(Technical Specification Reference 3.6.J)

3.0 REFERENCES

1. Report, General Electric Standard Application for Reactor Fuel (GESTARII), NEDE-24011-P-A-13, GE Company Proprietary, August 1996, as amended.

2. Report, General Electric Nuclear Energy, BWR Owners' Group Long-Term Stability Solutions Licensing Methodology, NEDO-31960, June 1991.

3. Report, General Electric Nuclear Energy, BWR Owners' Group Long-Term Stability Solutions Licensing Methodology, NEDO-31960, Supplement 1, March 1992.

4. Letter, USNRC to VYNPC, SER, August 9, 1995.

5. Report, Vermont Yankee Nuclear Power Station SAFER/GESTR-LOCA Loss-of-Coolant Analysis, NEDC-32814P, March 1998.

6. Report, Cycle Management Report for Vermont Yankee Nuclear Power Station Cycle 21, J11-03546CMR, Rev. 0, October 1999.

7. Report, General Electric Nuclear Energy, Supplemental Reload Licensing Report for Vermont Yankee Nuclear Power Station Reload 20/Cycle 21, J11-03546SRLR, Rev. 0, September 1999.

8. Report, Lattice Dependent MAPLHGR Report for Vermont Yankee Nuclear Power Station Reload 20, Cycle 21, J11-03546MAPL, Rev. 0, September 1999.

9.* Report, BWR Owners' Group Long-Term Stability Solutions Licensing Methodology," NEDO-31960-A, November 1995.

10.* Report, BWR Owners' Group Long-Term Stability Solutions Licensing Methodology," NEDO-31960-A, Supplement 1, November 1995.

11. Report, Vermont Yankee Nuclear Power Station Increased Core Flow Analysis, NEDC-32791P, February 1999.

12. Report, Reactor Recirculation System for Vermont Yankee Nuclear Power Station, GEK-9609, June 1971.

*References 9 and 10 are the generically approved documents for References 2 and 3, including the SER from Reference 4.