

ATTACHMENT B

Core Operating Limits Report

for

LaSalle County Station

Unit 2, Reload 3 (Cycle 4)

ZWLAP

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CORE OPERATING LIMITS REPORT

ISSUANCE OF CHANGES SUMMARY

Affected Section	Affected Pages	Summary of Changes	Date
All	All	Original Issue (Cycle 4)	4/90

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REFERENCES

1. Commonwealth Edison Company Docket No. 50-373, LaSalle County Station, Unit 2 Facility Operating License, License No. NPF-18.
2. Letter from D. M. Crutchfield to All Power Reactor Licensees and Applicants, Generic Letter 88-16; Concerning the Removal of Cycle-Specific Parameter Limits from Tech Specs, dated October 4, 1988.
3. Supplemental Reload License Submittal for LaSalle County Station, Unit 2, Reload 3 (Cycle 4), 23A5973, Rev. 0, December 1989.
4. LaSalle County Station, Units 1 and 2, SAFER/GESTR LOCA Loss-of-Coolant-Accident Analysis, NEDC, 3151OP (latest approved version).
5. General Electric Standard Application for Reactor Fuel (GESTAR), NEDE-24011-P-A (latest approved version).

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1.0 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (3/4.2.1)

1.1 Tech Spec REFERENCE:

Tech Spec 3.2.1.

1.2 DESCRIPTION:

The Maximum Average Planar Linear Heat Generation Rates (MAPLHGR) versus Average Planar Exposure for fuel type 8CRB219 is determined from Table 1.2-1.

The Maximum Average Planar Linear Heat Generation Rates (MAPLHGR) versus Average Planar Exposure for fuel type BP8CRB299L is determined from Table 1.2-2.

The Maximum Average Planar Linear Heat Generation Rates (MAPLHGR) versus Average Planar Exposure for fuel type BC320C is determined from Table 1.2-3.

The Maximum Average Planar Linear Heat Generation Rates (MAPLHGR) versus Average Planar Exposure for fuel type BC300D is determined from Table 1.2-4.

The Maximum Average Planar Linear Heat Generation Rates (MAPLHGR) versus Average Planar Exposure for fuel type P8CWB303-9GZ is determined from Table 1.2-5.

The Maximum Average Planar Linear Heat Generation Rates (MAPLHGR) versus Average Planar Exposure for fuel type P8CWB303-10GZ is determined from Table 1.2-6.

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
vs. AVERAGE PLANAR EXPOSURE FOR FUEL TYPE 8CRB219

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TABLE 1.2-1

<u>Exposure (Mwd/ST)</u>	<u>LATTICE SPECIFIC MAPLHGR (kw/ft)</u>
	<u>8CIL232</u>
200	11.90
1000	12.00
5000	12.10
10000	12.20
15000	12.20
20000	12.10
25000	11.60
30000	11.20
37200	10.00

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MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
vs. AVERAGE PLANAR EXPOSURE FOR FUEL TYPE BP8CRB299L

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TABLEE 1.2-2

<u>Exposure (MWd/ST)</u>	<u>LATTICE SPECIFIC MAPLHGR (kw/ft)</u>
	<u>P8CRL319</u>
200	10.80
1000	11.00
5000	11.80
10000	12.30
15000	12.40
20000	12.30
25000	11.80
30000	11.25
35000	10.70
45000	9.20

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MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
vs. AVERAGE PLANAR EXPOSURE FOR FUEL TYPE BC320C

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FIGURE 1.2-3

<u>Exposure (MWd/ST)</u>	<u>LATTICE SPECIFIC MAPLHGR (kw/ft)</u>		
	<u>P8COL340-7G4.0</u>	<u>P8COL340-7G3.0</u>	<u>P8COL071</u>
0.0	11.57	11.63	12.44
200	-	-	12.36
1000	-	-	12.15
2000	-	-	12.08
3000	-	12.21	12.08
4000	12.23	12.41	12.10
6000	12.57	12.83	-
8000	12.94	13.06	-
10000	13.12	-	12.25
12500	13.03	13.04	-
15000	12.71	12.72	-
25000	-	-	10.11
35000	10.15	10.16	8.53
45000	8.50	8.55	-
45600	-	-	5.09
50000	6.08	6.12	-

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MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
vs. AVERAGE PLANAR EXPOSURE FOR FUEL TYPE BC300D

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FIGURE 1.2-4

<u>Exposure (Mwd/ST)</u>	<u>LATTICE SPECIFIC MAPLHGR (kw/ft)</u>	
	<u>P8CQL319</u> <u>6G3.0</u>	<u>P8CQL071</u>
0.0	11.77	12.44
200	-	12.36
1000	-	12.15
2000	12.33	12.08
3000	12.61	12.08
4000	12.91	12.10
5000	13.22	-
10000	13.45	12.25
15000	13.17	-
25000	-	10.11
35000	10.65	8.53
45000	8.73	-
45600	-	5.09
50000	6.62	-

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MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
vs. AVERAGE PLANAR EXPOSURE FOR FUEL TYPE P8CWB303-9GZ

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TABLE 1.2-5

Exposure (Mwd/ST)	LATTICE SPECIFIC MAPLHGR (kw/ft)				
	P8CWL071 <u>NOG</u>	P8CWL327 <u>9G5.0</u>	P8CWL338 <u>4G5.0/5G4.0</u>	P8CWL327 <u>4G5.0/5G4.0</u>	P8CWL071 <u>9GE</u>
0.0	12.74	11.98	11.35	12.01	12.74
200	12.67	12.05	11.39	12.08	12.67
1000	12.48	12.17	11.48	12.22	12.48
2000	12.42	12.37	11.67	12.43	12.42
3000	12.41	12.56	11.90	12.61	12.41
4000	12.44	12.69	12.16	12.78	12.44
5000	12.46	12.81	12.38	12.91	12.46
6000	12.49	12.92	12.56	13.03	12.49
7000	12.51	13.04	12.75	13.15	12.51
8000	12.54	13.16	12.94	13.27	12.54
9000	12.55	13.29	13.13	13.37	12.55
10000	12.57	13.41	13.29	13.47	12.57
12500	12.41	13.49	13.33	13.51	12.41
15000	12.04	13.18	13.05	13.20	12.04
20000	11.27	12.54	12.46	12.55	11.27
25000	10.49	11.84	11.87	11.84	10.49
35000	8.95	10.35	10.54	10.36	8.95
45000	6.15	9.02	9.14	9.02	6.15
46900	5.21	-	-	-	5.21
51500	-	-	5.90	-	-
51800	-	5.82	-	5.81	-

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MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE (MAPLHGR)
vs. AVERAGE PLANAR EXPOSURE FOR FUEL TYPE P8CWB303-10G2

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TABLE 1.2-6

Exposure (Mwd/ST)	LATTICE SPECIFIC MAPLHGR (kw/ft)				
	<u>P8CWL071</u> <u>NOG</u>	<u>P8CWL326</u> <u>6G5.0/4G4.0</u>	<u>P8CWL338</u> <u>10G4.0</u>	<u>P8CWL326</u> <u>10G4.0</u>	<u>P8CWL071</u> <u>10GE</u>
0.0	12.74	12.02	11.69	12.07	12.74
200	12.67	12.08	11.75	12.14	12.67
1000	12.46	12.23	11.91	12.30	12.48
2000	12.42	12.44	12.09	12.55	12.42
3000	12.41	12.68	12.25	12.81	12.41
4000	12.44	12.89	12.40	12.98	12.44
5000	12.46	13.04	12.56	13.15	12.46
6000	12.49	13.18	12.72	13.29	12.49
7000	12.51	13.33	12.88	13.36	12.51
8000	12.54	13.49	13.05	13.44	12.54
9000	12.55	13.57	13.21	13.53	12.55
10000	12.57	13.59	13.33	13.60	12.57
12500	12.41	13.61	13.29	13.63	12.41
15000	12.04	13.29	12.97	13.31	12.04
20000	11.27	12.63	12.33	12.64	11.27
25000	10.49	11.84	11.70	11.85	10.49
35000	8.95	10.35	10.40	10.36	8.95
45000	6.15	9.00	8.97	9.01	6.15
46900	5.21	-	-	-	5.21
51100	-	-	5.90	-	-
51900	-	5.78	-	-	-
52000	-	-	-	5.79	-

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2.0 MINIMUM CRITICAL POWER RATIO (3/4.2.3)

2.1 Tech Spec REFERENCE:

Tech Spec 3.2.3.

2.2 DESCRIPTION:

a. Single Recirculation Loop Operation

The MCPR limit when in Single Recirculation Loop Operation is determined from Figure 2.2-1 plus 0.01, times the Kf factor determined from Figure 2.2-3.

b. Two Recirculation Loop Operation

The MCPR limit when in Dual Recirculation Loop Operation is determined from Figure 2.2-1 times the Kf factor determined from Figure 2.2-3.

c. Two Recirculation Loop Operation with Main Turbine Bypass Inoperable

The MCPR limit when in Dual Recirculation Loop Operation with the Main Turbine Bypass Inoperable (per Tech Spec 3.7.10) is determined from Figure 2.2-2 times the Kf factor determined from Figure 2.2-3.

d. Two Recirculation Loop Operation with End-of-Cycle Recirculation Pump Trip System Inoperable

The MCPR limit when in Dual Recirculation Loop Operation with the End-of-Cycle Recirculation Pump Trip System (RPT) Inoperable (per Tech Spec 3.3.4.2) is determined from Figure 2.2-2 times the Kf factor determined from Figure 2.2-3.

Power Distribution Limits

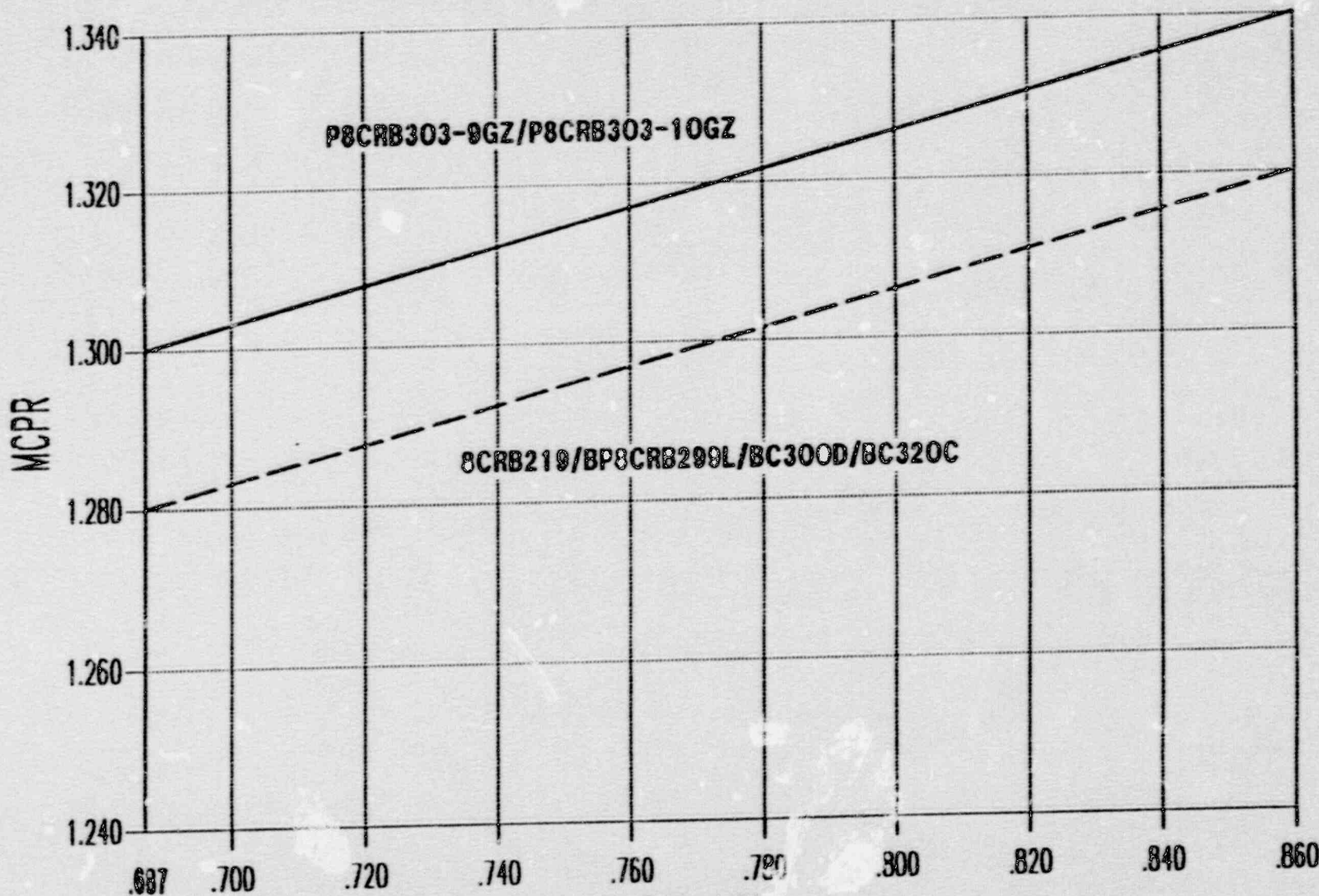
MCPR

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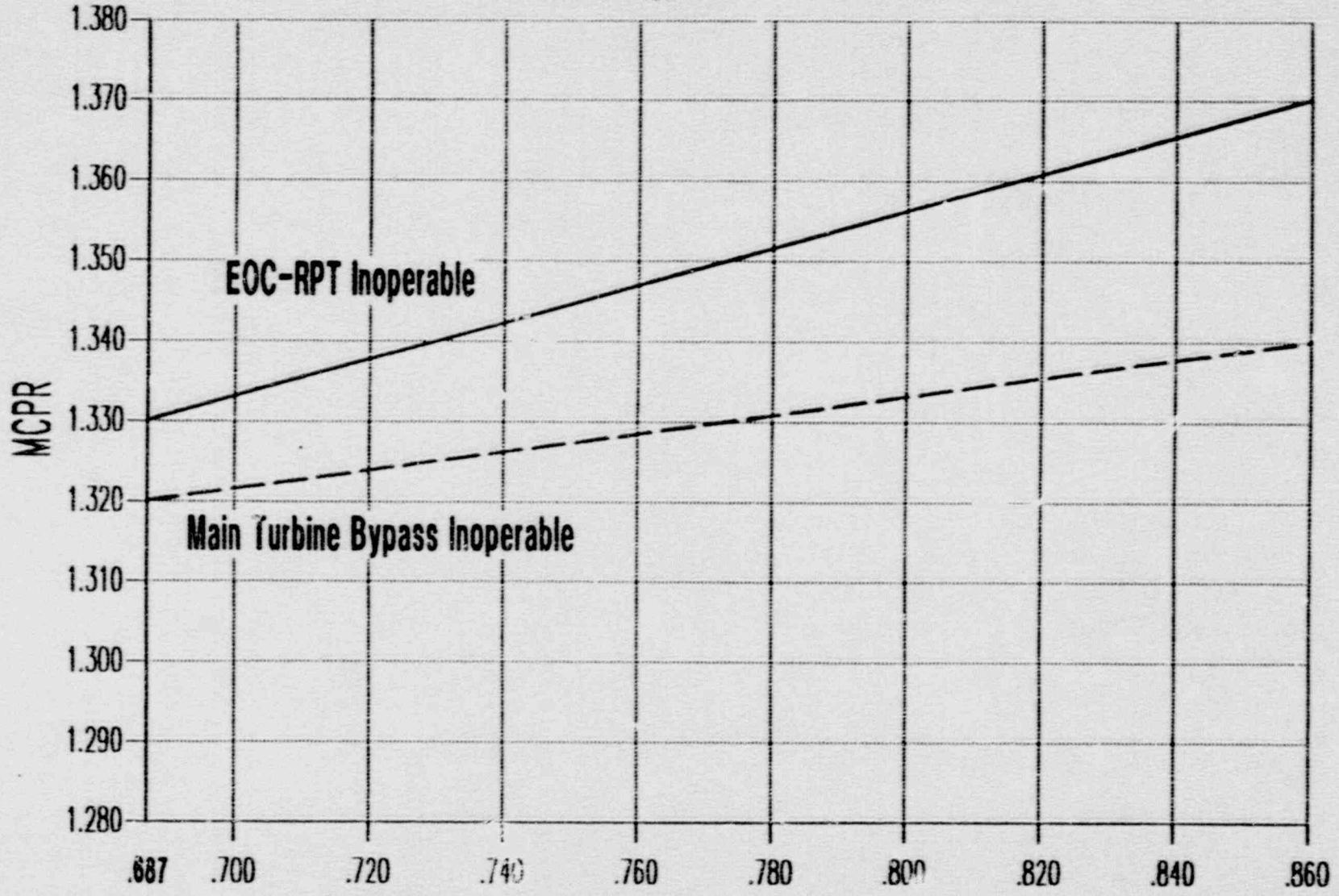


MCPR versus ζ at Rated Flow
Figure 2.2-1

Power Distribution Limits

MCPR - EOUS
(All fuel types)

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MCPR versus x at Rated Flow
Figure 2.2-2

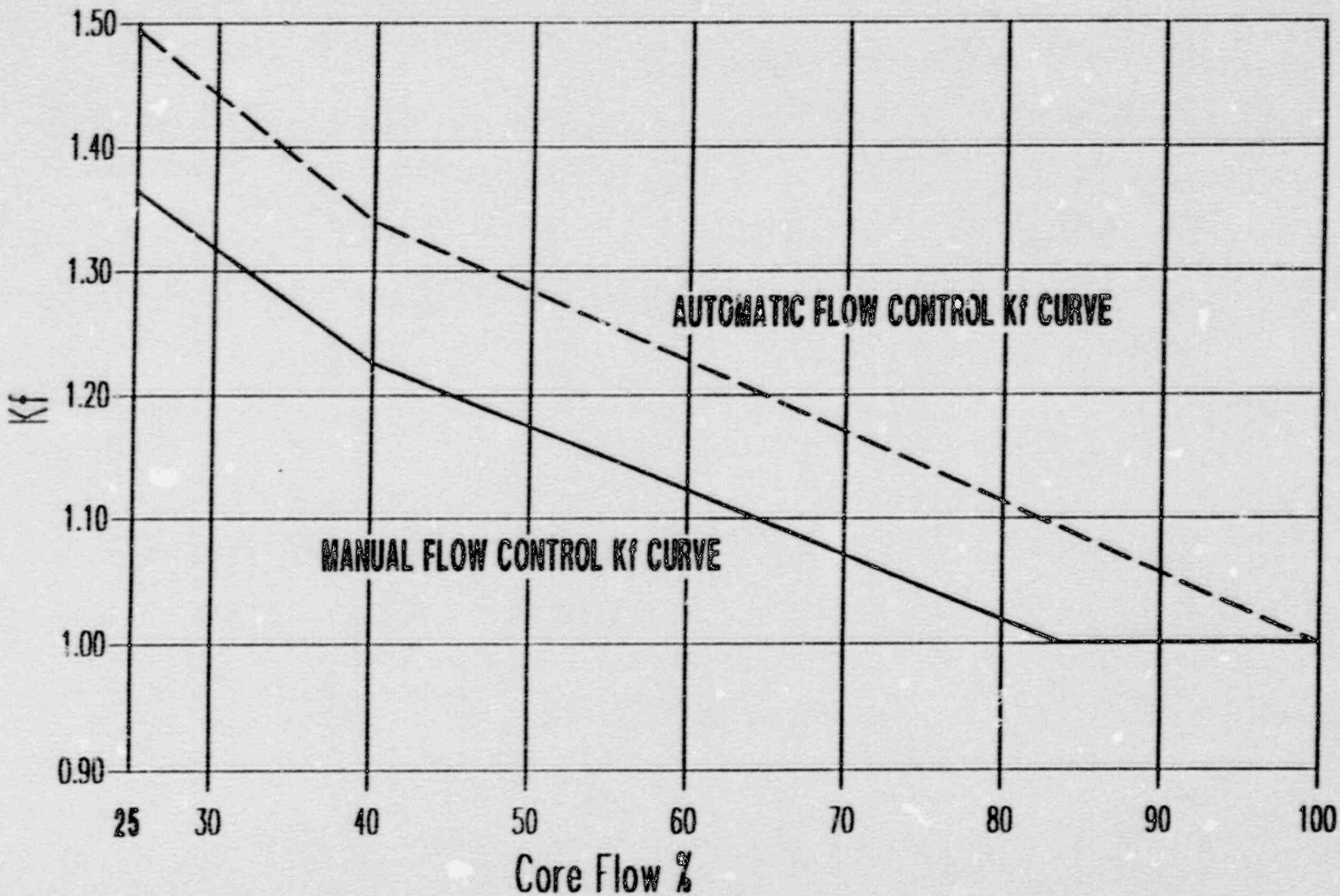
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Kf Factor

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Core Flow %
Figure 2.2-3

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3.0 LINEAR HEAT GENERATION RATE (3/4.2.4)

3.1 Tech Spec REFERENCE:

Tech Spec 3.2.4.

3.2 DESCRIPTION:

a. The LHGR limit is 13.4 kw/ft for fuel types:

1. BCRB219
2. BP8CRB299L

b. The LHGR limit is 14.4 kw/ft for fuel types:

1. BC300D
2. BC320C
3. P8CWB303-9GZ
4. P8CWB303-10GZ