

ISSUANCE OF CHANGES SUMMARY

Affected Section	Affected Pages	Summary of Changes	Date
All	All	Original Issue (Cycle 11).	10/89
All	All	Original Issue (Cycle 12), Reissue.	11/91 2/92
All	All	Original Issue (Cycle 13).	2/93
2	2	Added Section 2.3 on SLO.	3/93
References, 4.2 & 5	iii, 4 & 5	Revised References and Section 4.2 and added Section 5.0 on Analytical Methods.	4/94
All	All	Original Issue (Cycle 14).	6/95
All	All	Latest Date Revised added to each COLR page, Added Special Instructions and boxed in TSUP References for TSUP Implementation. Added Control Rod Withdrawal Block Equation for Single Loop Operation.	5/96

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SPECIAL INSTRUCTIONS

1. This Core Operating Limits Report (COLR) contains the applicable reactor core limits and operational information mandated by Technical Specification 6.6.A.4, (TSUP Technical Specification Section 6.9.A.6). When the COLR is referenced by applicable Technical Specifications or procedures for Technical Specification compliance, a controlled copy of this report shall be used as the official source of the applicable limit or requirement.
2. Implementation of the Technical Specification Upgrade Program (TSUP): The referenced Technical Specifications in this Report contain a notation as shown below, when indicating the applicable TSUP section(s). This reference is to be used when the COLR is used after the activation of TSUP, for the duration of the current operating cycles.

Example of Technical Specification reference:

TECHNICAL SPECIFICATION REFERENCE:
Technical Specification 3.5.1

TSUP TECHNICAL SPECIFICATION: 3.11.A

REFERENCES

1. Commonwealth Edison Company and Iowa-Illinois Gas and Electric Company Docket No. 50-265, Quad Cities Station, Unit 2 Facility Operating License, License No. DPR-30.
2. Letter from D. M. Crutchfield to All Power Reactor Licenses and Applicants, Generic Letter 88-16; Concerning the Removal of Cycle-Specific Parameter Limits from Technical Specifications.
3. Supplemental Reload Licensing Report for Quad Cities Nuclear Power Station, Unit 2 Reload 13 Cycle 14, 25A5161, Revision 0, December, 1994.
4. Quad Cities Nuclear Power Station, Units 1 and 2, SAFER/GESTR - LOCA Loss-of-Coolant Accident Analysis, NEDC-31345P, Revision 2, July 1989 (as amended).
5. Extended Operating Domain and Equipment Out-Of-Service for Quad Cities Nuclear Power Station Units 1 and 2, NEDC-31449, Revision 1, April 1992.
6. GE document GENE-637-037-1193, "Analysis of End of Full Power Capability Cooldown with Load Following for Quad Cities 1 and 2, dated November, 1993.
7. Lattice Dependent MAPLHGR Report for Quad Cities Nuclear Power Station, Unit 2, Reload 13 Cycle 14, 24A5161-AA Revision 0, December, 1994.

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1.0 CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION (3.2/4.2)

1.1. TECHNICAL SPECIFICATION REFERENCE:

Technical Specification Table 3.2-3 and 3.6.H.3.d

TSUP Technical Specification: Table 3.2.E-1 [COLR 1.2], 3.6.A.1.c
[COLR 1.3]

1.2. DESCRIPTION:

The Rod Withdrawal Block Monitor Upscale Instrumentation Trip Setpoint for two recirculation loop operation is determined from the following relationship:

$$\leq (0.65)Wd + 43\% **$$

1.3. DESCRIPTION:

The Rod Withdrawal Block Monitor Upscale Instrument Trip Setpoint for Single Recirculation Loop Operation (SLO) is determined from the following relationship.

$$\leq (0.65)Wd + 39\% **$$

** Clamped, with an allowable value not to exceed the allowable value for recirculation loop drive flow (Wd) of 100%.

Wd is the percent of drive flow required to produce a rated core flow of 98 million lb/hr. Trip level setting is in percent of rated power (2511 MWth).

2.0 AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR) (3.5/4.5)

2.1 TECHNICAL SPECIFICATION REFERENCE:

Technical Specification 3.5.1

TSUP Technical Specification 3.11.A

2.2 DESCRIPTION:

MAPLHGR versus Average Planar Exposure for GE8B-P8DQB300-9G3.0-80M-4WR-145-T is determined from Table 2-1.

MAPLHGR versus Average Planar Exposure for GE8B-P8DQB316-7G4.0-80M-4WR-145-T is determined from Table 2-2.

MAPLHGR versus Average Planar Exposure for GE9B-P8DWB310-9GZ-80M-145-T is determined from Table 2-3.

MAPLHGR versus Average Planar Exposure for GE9B-P8DWB299-11GZ-80M-145-T is determined from Table 2-4.

MAPLHGR versus Average Planar Exposure for GE9B-P8DWB286-7G3.0-80M-145-T is determined from Table 2-5.

MAPLHGR versus Average Planar Exposure for GE9B-P8DWB286-9GZ-80M-145-T is determined from Table 2-6.

MAPLHGR versus Average Planar Exposure for GE9B-P8DWB310-7G3.0-80M-145-T is determined from Table 2-7.

MAPLHGR versus Average Planar Exposure for GE9B-P8DWB308-10GZ1-80M-145-T is determined from Table 2-8.

MAPLHGR versus Average Planar Exposure for GE10-P8HXB316-8GZ-100M-145-T is determined from Table 2-9.

MAPLHGR versus Average Planar Exposure for GE10-P8HXB312-7GZ-100M-145-T is determined from Table 2-10.

2.3 SINGLE LOOP OPERATION MULTIPLIER:

The tabulated values are multiplied by 0.85 whenever Quad Cities enters Single Loop Operation.

TABLE 2-1

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE GE8B-P8DQB300-9G3.0-80M-4WR-145-T

LATTICE 565 : P8DQL071-NOG-80M-4WR-T
LATTICE 671 : P8DQL320-9G3.0-80M-4WR-T
LATTICE 686 : P8DQL071-9GE2-80M-4WR-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)		
	565	671	686
0.00	11.57	11.39	11.57
0.20	11.50	11.42	11.50
1.00	11.30	11.50	11.30
2.00	11.28	11.75	11.28
3.00	11.33	12.08	11.33
4.00	11.40	12.47	11.40
5.00	11.48	12.80	11.48
6.00	11.55	13.01	11.55
7.00	11.61	13.16	11.61
8.00	11.66	13.29	11.66
9.00	11.69	13.39	11.69
10.00	11.72	13.44	11.72
12.50	11.44	13.34	11.44
15.00	11.07	12.96	11.07
20.00	10.29	12.19	10.29
25.00	9.50	11.46	9.50
35.00	7.93	10.08	7.93
43.30	4.66	-	4.66
45.00	-	8.46	-
50.00	-	6.14	-

TABLE 2-2

**MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE GE8B-P8DQB316-7G4.0-80M-4WR-145-T**

LATTICE 565 : P8DQL071-NOG-80M-4WR-T
LATTICE 679 : P8DQL337-7G4.0-80M-4WR-T
LATTICE 649 : P8DQL071-7GE1-80M-4WR-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)		
	565	679	649
0.00	11.57	11.70	11.57
0.20	11.50	11.69	11.50
1.00	11.30	11.74	11.30
2.00	11.28	11.86	11.28
3.00	11.33	12.01	11.33
4.00	11.40	12.18	11.40
5.00	11.48	12.38	11.48
6.00	11.55	12.59	11.55
7.00	11.61	12.81	11.61
8.00	11.66	12.99	11.66
9.00	11.69	13.06	11.69
10.00	11.72	13.08	11.72
12.50	11.44	13.01	11.44
15.00	11.07	12.66	11.07
20.00	10.29	11.97	10.29
25.00	9.50	11.31	9.50
35.00	7.93	10.05	7.93
43.30	4.66	-	4.66
45.00	-	8.45	-
50.00	-	5.99	-

TABLE 2-3

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE : GE9B-P8DWB310-9GZ-80M-145-T

LATTICE 731 : P8DWL071-NOG-80M-T
LATTICE 847 : P8DWL334-7G3.0-80M-T
LATTICE 848 : P8DWL350-7G3.0-80M-T
LATTICE 849 : P8DWL350-2G4.0/7G3.0-80M-T
LATTICE 846 : P8DWL071-9GE1-80M-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)				
	731	847	848	849	846
0.00	11.64	12.25	11.78	11.31	11.64
0.20	11.57	12.32	11.85	11.39	11.57
1.00	11.38	12.46	11.99	11.55	11.38
2.00	11.36	12.62	12.19	11.78	11.36
3.00	11.41	12.79	12.36	12.02	11.41
4.00	11.49	12.96	12.52	12.22	11.49
5.00	11.56	13.14	12.69	12.44	11.56
6.00	11.63	13.23	12.81	12.60	11.63
7.00	11.69	13.30	12.93	12.77	11.69
8.00	11.74	13.38	13.04	12.93	11.74
9.00	11.78	13.43	13.14	13.08	11.78
10.00	11.81	13.46	13.21	13.20	11.81
12.50	11.54	13.41	13.21	13.21	11.54
15.00	11.16	13.02	12.94	12.93	11.16
20.00	10.37	12.28	12.30	12.29	10.37
25.00	9.53	11.57	11.61	11.60	9.58
35.00	8.01	10.27	10.29	10.27	8.01
43.70	4.71	-	-	-	4.71
45.00	-	9.02	8.98	8.92	-
51.10	-	-	-	5.90	-
51.20	-	5.96	5.90	-	-

TABLE 2-4

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE : GE9B-P8DWB299-11GZ-80M-145-T

LATTICE 731 : P8DWL071-NOG-80M-T
LATTICE 850 : P8DWL322-9G3.0-80M-T
LATTICE 851 : P8DWL337-9G3.0-80M-T
LATTICE 852 : P8DWL337-2G4.0/9G3.0-80M-T
LATTICE 853 : P8DWL071-11GE-80M-T

AVERAGE PLANAR EXPOSURE (GWd/MT)	MAPLHGR LIMITS (KW/FT)				
	731	850	851	852	853
0.00	11.64	11.49	11.31	10.87	11.64
0.20	11.57	11.52	11.38	10.96	11.57
1.00	11.38	11.62	11.56	11.14	11.38
2.00	11.36	11.87	11.84	11.44	11.36
3.00	11.41	12.19	12.05	11.70	11.41
4.00	11.49	12.57	12.21	11.88	11.49
5.00	11.56	12.94	12.37	12.07	11.56
6.00	11.63	13.04	12.54	12.27	11.63
7.00	11.69	13.14	12.73	12.50	11.69
8.00	11.74	13.21	12.90	12.72	11.74
9.00	11.78	13.26	13.03	12.92	11.78
10.00	11.81	13.28	13.11	13.07	11.81
12.50	11.54	13.21	13.07	13.06	11.54
15.00	11.16	12.82	12.81	12.81	11.16
20.00	10.37	12.07	12.30	12.30	10.37
25.00	9.58	11.36	11.66	11.64	9.58
35.00	8.01	10.07	10.29	10.27	8.01
42.70	4.71	-	-	-	4.71
45.00	-	8.61	8.85	8.82	-
50.60	-	5.89	-	-	-
51.00	-	-	-	5.84	-
51.20	-	-	5.81	-	-

TABLE 2-5

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
For BUNDLE TYPE : GE9B-P8DWB286-7G3.0-80M-145-T

LATTICE 731 : P8DWL071-NOG-80M-T
LATTICE 1059 : P8DWL306-7G3.0-80M-T
LATTICE 1060 : P8DWL324-7G3.0-80M-T
LATTICE 1061 : P8DWL071-7GE1-80M-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)			
	731	1059	1060	1061
0.00	11.64	12.38	11.95	11.64
0.20	11.57	12.45	12.03	11.57
1.00	11.38	12.54	12.11	11.38
2.00	11.36	12.65	12.30	11.36
3.00	11.41	12.75	12.57	11.41
4.00	11.49	12.85	12.88	11.49
5.00	11.56	12.94	12.97	11.56
6.00	11.63	12.95	13.01	11.63
7.00	11.69	12.97	13.09	11.69
8.00	11.74	13.01	13.17	11.74
9.00	11.73	13.05	13.21	11.78
10.00	11.81	13.09	13.23	11.81
12.50	11.54	13.04	13.16	11.54
15.00	11.16	12.71	12.79	11.16
20.00	10.37	12.06	12.06	10.37
25.00	9.58	11.43	11.37	9.58
35.00	8.01	10.04	10.12	8.01
43.66	4.71	-	-	4.71
45.00	-	8.60	8.68	-
50.66	-	5.84	-	-
50.75	-	-	5.91	-

TABLE 2-6

**MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE GE9B-P8DWB286-9GZ-80M-145-T**

LATTICE 731 : P8DWL071-NOG-80M-T
LATTICE 1059 : P8DWL306-7G3.0-80M-T
LATTICE 1060 : P8DWL324-7G3.0-80M-T
LATTICE 1000 : P8DWL324-2G4.0/7G3.0-80M-T
LATTICE 1001 : P8DWL071-9GE-80M-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)				
	731	1059	1060	1000	1001
0.00	11.64	12.38	11.95	11.42	11.64
0.20	11.57	12.45	12.03	11.51	11.57
1.00	11.38	12.54	12.11	11.59	11.38
2.00	11.36	12.65	12.30	11.82	11.36
3.00	11.41	12.75	12.57	12.13	11.41
4.00	11.49	12.85	12.88	12.51	11.49
5.00	11.56	12.94	12.97	12.69	11.56
6.00	11.63	12.95	13.01	12.80	11.63
7.00	11.69	12.97	13.09	12.92	11.69
8.00	11.74	13.01	13.17	13.04	11.74
9.00	11.78	13.05	13.21	13.14	11.78
10.00	11.81	13.09	13.23	13.20	11.81
12.50	11.54	13.04	13.16	13.14	11.54
15.00	11.16	12.71	12.79	12.77	11.16
20.00	10.37	12.06	12.06	12.04	10.37
25.00	9.58	11.43	11.37	11.36	9.58
35.00	8.01	10.04	10.12	10.11	8.01
43.66	4.71	-	-	-	4.71
45.00	-	8.60	8.68	8.65	-
50.66	-	5.84	-	5.92	-
50.75	-	-	5.91	-	-

TABLE 2-7

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE : GE9B-P8DWB310-7G3.0-80M-145-T

LATTICE 731 : P8DWL071-NOG-80M-T
LATTICE 1644 : P8DWL334-7G3.0-80M-T
LATTICE 1645 : P8DWL350-7G3.0-80M-T
LATTICE 1004 : P8DWL071-7GE-80M-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)			
	731	1644	1645	1004
0.00	11.64	12.25	11.78	11.64
0.20	11.57	12.32	11.85	11.57
1.00	11.38	12.46	11.99	11.38
2.00	11.36	12.62	12.19	11.36
3.00	11.41	12.79	12.36	11.41
4.00	11.49	12.96	12.52	11.49
5.00	11.56	13.14	12.69	11.56
6.00	11.63	13.23	12.81	11.63
7.00	11.69	13.30	12.93	11.69
8.00	11.74	13.38	13.04	11.74
9.00	11.78	13.43	13.14	11.78
10.00	11.81	13.46	13.21	11.81
12.50	11.54	13.41	13.22	11.54
15.00	11.16	13.03	12.95	11.16
20.00	10.37	12.29	12.31	10.37
25.00	9.58	11.58	11.62	9.58
35.00	8.01	10.28	10.31	8.01
43.66	4.71	-	-	4.71
45.00	-	9.04	9.01	-
51.41	-	-	5.88	-
51.43	-	5.94	-	-

TABLE 2-8

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE : GE9B-P8DWB308-10GZ1-80M-145-T

LATTICE 731 : P8DWL071-NOG-80M-T
LATTICE 1642 : P8DWL332-8G4.0/2G3.0-80M-T
LATTICE 1669 : P8DWL348-8G4.0/2G3.0-80M-T
LATTICE 1188 : P8DWL071-10GE-80M-T

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)			
	731	1642	1669	1188
0.00	11.64	11.63	11.24	11.64
0.20	11.57	11.69	11.31	11.57
1.00	11.38	11.83	11.44	11.38
2.00	11.36	12.04	11.62	11.36
3.00	11.41	12.25	11.82	11.41
4.00	11.49	12.48	12.02	11.49
5.00	11.56	12.58	12.24	11.56
6.00	11.63	12.69	12.44	11.63
7.00	11.69	12.86	12.62	11.69
8.00	11.74	13.04	12.75	11.74
9.00	11.78	13.19	12.90	11.78
10.00	11.81	13.31	13.05	11.81
12.50	11.54	13.32	13.14	11.54
15.00	11.16	12.96	12.92	11.16
20.00	10.37	12.22	12.25	10.37
25.00	9.58	11.53	11.57	9.58
35.00	8.01	10.24	10.26	8.01
43.66	4.71	-	-	4.71
45.00	-	8.93	8.93	-
51.09	-	5.96	-	-
51.15	-	-	5.90	-

TABLE 2-9

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE : GE10-P8HXB316-8GZ-100M-145-T

LATTICE 7400 : P8HXL071-NOG-100M
LATTICE 7467 : P8HXL341-6G4.0/2G3.0-100M
LATTICE 7469 : P8HXL357-6G4.0/2G3.0-100M
LATTICE 7468 : P8HXL341-8G3.0-100M
LATTICE 7404 : P8HXL071-8GE-100M

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)				
	7400	7467	7469	7468	7404
0.00	11.85	12.00	11.11	12.08	11.85
0.20	11.78	12.06	11.14	12.15	11.78
1.00	11.59	12.18	11.24	12.30	11.59
2.00	11.57	12.36	11.44	12.53	11.57
3.00	11.61	12.50	11.70	12.68	11.61
4.00	11.68	12.60	11.99	12.82	11.68
5.00	11.75	12.71	12.26	12.96	11.75
6.00	11.81	12.84	12.37	13.12	11.81
7.00	11.86	13.01	12.51	13.29	11.86
8.00	11.91	13.20	12.68	13.44	11.91
9.00	11.94	13.39	12.86	13.53	11.94
10.00	11.97	13.52	13.01	13.55	11.97
12.50	11.75	13.44	13.09	13.44	11.75
15.00	11.38	13.06	12.84	13.07	11.38
20.00	10.59	12.32	12.21	12.33	10.59
25.00	9.81	11.60	11.54	11.61	9.81
35.00	8.26	10.21	10.25	10.22	8.26
44.89	4.93	-	-	-	4.93
45.00	-	8.72	8.82	8.72	-
50.76	-	-	-	5.87	-
50.78	-	5.86	-	-	-
50.88	-	-	5.90	-	-

TABLE 2-10

MAPLHGR vs. AVERAGE PLANAR EXPOSURE
FOR BUNDLE TYPE : GE10-P8HXB312-7GZ-100M-145-T

LATTICE 7400 : P8HXL071-NOG-100M
LATTICE 7405 : P8HXL336-3G4.0/4G3.0-100M
LATTICE 7406 : P8HXL354-1G4.0/6G3.0-100M
LATTICE 7407 : P8HXL336-7G3.0-100M
LATTICE 7408 : P8HXL071-7GE-100M

AVERAGE PLANAR EXPOSURE (GWd/ST)	MAPLHGR LIMITS (KW/FT)				
	7400	7405	7406	7407	7408
0.00	11.85	12.01	11.27	12.04	11.85
0.20	11.78	12.08	11.31	12.11	11.78
1.00	11.59	12.23	11.42	12.27	11.59
2.00	11.57	12.43	11.65	12.49	11.57
3.00	11.61	12.65	11.93	12.72	11.61
4.00	11.68	12.88	12.24	12.96	11.68
5.00	11.75	13.09	12.58	13.15	11.75
6.00	11.81	13.22	12.94	13.30	11.81
7.00	11.86	13.32	13.15	13.41	11.86
8.00	11.91	13.40	13.32	13.46	11.91
9.00	11.94	13.45	13.43	13.47	11.94
10.00	11.97	13.47	13.50	13.45	11.97
12.50	11.75	13.35	13.45	13.35	11.75
15.00	11.38	12.97	13.10	12.97	11.38
20.00	10.59	12.23	12.41	12.24	10.59
25.00	9.81	11.51	11.74	11.52	9.81
35.00	8.26	10.14	10.41	10.15	8.26
44.89	4.93	-	-	-	4.93
45.00	-	8.61	9.01	8.60	-
50.55	-	-	-	5.85	-
50.59	-	5.85	-	-	-
51.56	-	-	5.86	-	-

3.0 LINEAR HEAT GENERATION RATE (LHGR) (3.5/4.5)

3.1 TECHNICAL SPECIFICATION REFERENCE:

Technical Specification 3.5.J

TSUP Technical Specification 3.11.D

3.2 DESCRIPTION:

A. The LHGR limit is 14.4 Kw/ft for all fuel types:

1. GE8B-P8DQB300-9G3.0-80M-4WR-145-T
2. GE8B-P8DQB316-7G4.0-80M-4WR-145-T
3. GE9B-P8DWB310-9GZ-80M-145-T
4. GE9B-P8DWB299-11GZ-80M-145-T
5. GE9B-P8DWB286-7G3.0-80M-145-T
6. GE9B-P8DWB286-9GZ-80M-145-T
7. GE9B-P8DWB310-7G3.0-80M-145-T
8. GE9B-P8DWB308-10GZ1-80M-145-T
9. GE10-P8HXB316-8GZ-100M-145-T
10. GE10-P8HXB312-7GZ-100M-145-T

4.0 MINIMUM CRITICAL POWER RATIO (MCPR) (3.5/4.5)

4.1 TECHNICAL SPECIFICATION REFERENCE:

Technical Specifications 3.5.K and 3.6.H

TSUP Technical Specification 3.11.C

4.2 DESCRIPTION:

During steady-state operation at rated core flow, the Operating Limit MCPR (OLMCPR) shall be greater than or equal:

$$1.28 \text{ for } t_{ave} \leq 0.68 \text{ seconds}$$

$$(0.555)t_{ave} + 0.903 \text{ for } 0.68 \leq t_{ave} \leq 0.86 \text{ seconds}$$

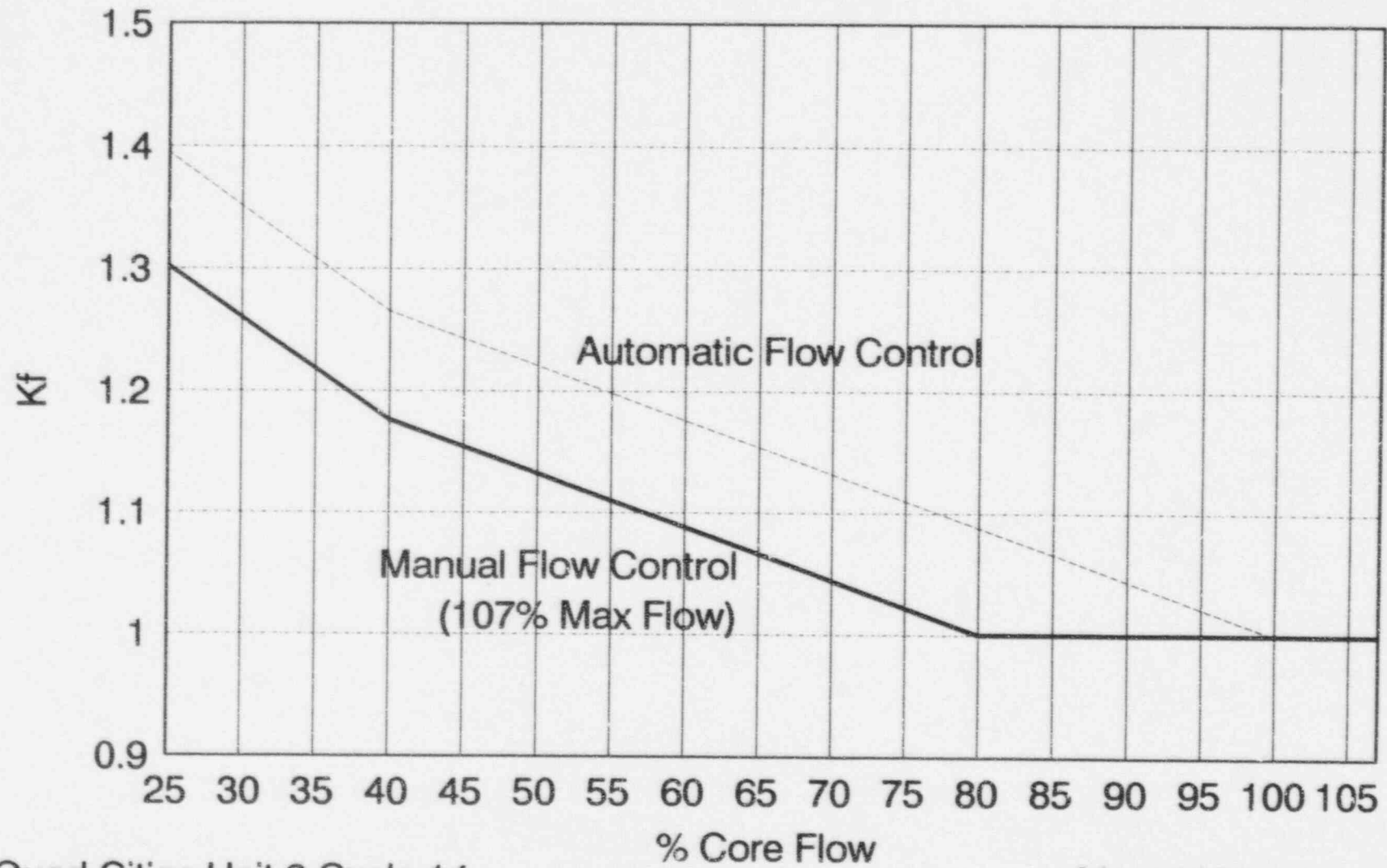
where t_{ave} = mean 20% scram insertion time for all surveillance data from Technical Specification 4.3.C which has been generated in the current cycle.

For core flows other than rated, these nominal values of OLMCPR shall be increased by a factor of K_f where K_f is as shown in Figure 4-1.

The (τ -ave dependent) OLMCPR limit stated above is valid for all planned Operational modes, including Increased Core Flow (ICF) and Final Feedwater Temperature Reduction (FFTR). The value corresponds to the cycle specific determination of the bounding event. For Unit 2 Cycle 14 this event is the Load Reject w/o Bypass (LRNB), with the above Operational modes incorporated. This value was determined to be 1.32 for the minimum τ -ave of .68 seconds. This limit matches the cycle independent limit from the Quad Cities Equipment Out-Of-Service / Extended Operating Domain analysis.

Unit Two has been approved for operating up to 15% (Reference 6) above equilibrium coastdown power level with multiple control rods inserted. At End of Full Power Capability (EFPC) a generic MCPR operating limit MCPR penalty of 0.06 must be added to the operating limit MCPR in order to exceed equilibrium coastdown power.

FIGURE 4-1
Kf FACTOR



5.0 Analytical Methods

The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the latest approved revision or supplement of the topical reports describing the methodology. For Quad Cities Unit 2, the topical reports are:

- (1) NEDE-24011-P-A "General Electric Standard Application for Reactor Fuel," (latest approved revision).
- (2) Commonwealth Edison Topical Report NFSR-0085, "Benchmark of BWR Nuclear Design Methods," (latest approved revision).
- (3) Commonwealth Edison Topical Report NFSR-0085, Supplement 1, "Quad Cities Gamma Scan Comparisons," (latest approved revision).
- (4) Commonwealth Edison Topical Report NFSR-0085, Supplement 2, "Design Methods - Neutronic Licensing Analyses," (latest approved revision).