TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

November 14, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Carl H. Berlinger, Chief
Core Performance Branch
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Berlinger:

In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority)

By the January 24, 1984 letter to you from L. M. Mills, TVA provided the peaking factor limit report for the Sequoyah Nuclear Plant unit 1, cycle 3 operations in accordance with paragraph 6.9.1.14 of the unit 1 technical specifications. Enclosed is a revised peaking factor limit report for unit 1, cycle 3 in which the format has been amended to provide an exact determination of W(Z) versus core height as a function of cycle burnup. We will be utilizing this revised format during the remainder of cycle 3 for unit 1. This is the same format submitted to you on August 23, 1984 for Sequoyah unit 2, cycle 3 operation.

If you have any questions concerning this matter, please get in touch with Jerry Wills at FTS 858-2683.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Domer

J. A. Domer
Nuclear Engineer

Sworn to and subscribed before me
this 14th day of Nov. 1984

Paulette D. White
Notary Public
My Commission Expires 8-24-88

Enclosure
cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Director of Nuclear Reactor Regulation (Enclosure)
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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PEAKING FACTOR LIMIT REPORT FOR SEQUOYAH UNIT 1 CYCLE 3

RAOC OPERATION

This peaking Factor Limit Report is provided in accordance with Paragraph 6.9.1.9 of the Sequoyah Unit 1 Technical Specifications.

The Sequoyah Unit 1 Cycle 3 elevation dependent W(z) values for RAOC operation at beginning, middle, and near end-of-life are shown in Figures 1 through 3 respectively. This information is sufficient to determine W(z) versus core height for Cycle 3 burnups in the range of 0 MWD/MTU to 14750 MWD/MTU through the use of three point interpolation. W(z) was calculated using the method described in Part B of Reference 1.

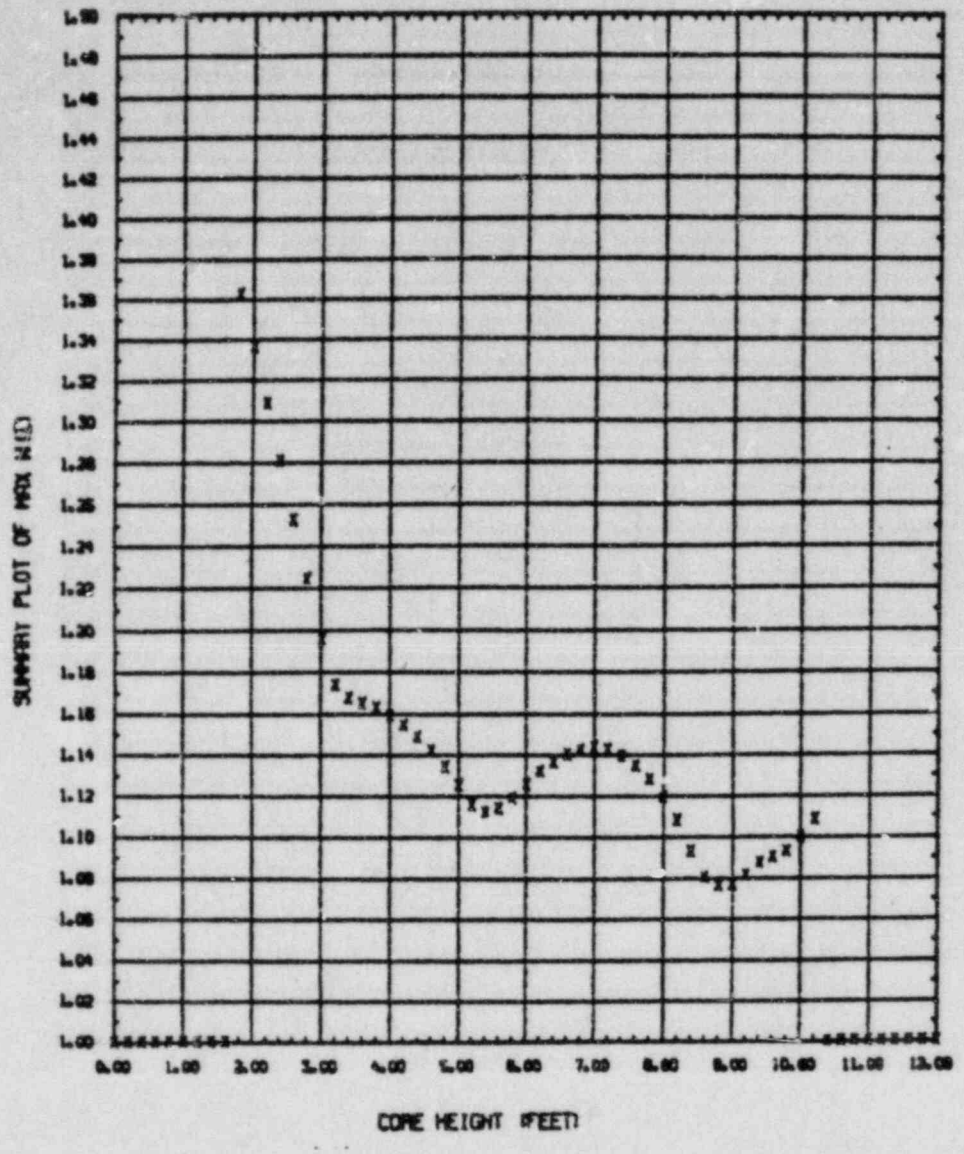
The appropriate W(z) function is used to confirm that the heat flux hot channel factor, $F_Q(z)$, will be limited to the Technical Specification values of:

$$F_Q(z) \leq \frac{2.237}{P} \quad [K(z)] \text{ for } P > 0.50 \text{ and}$$

$$F_Q(z) \leq 4.474 \quad [K(z)] \text{ for } P \leq 0.50$$

The appropriate elevation dependent W(z) values, when applied to a power distribution measured under equilibrium conditions, demonstrates that the initial conditions assumed in the LOCA are met, along with the ECCS acceptance criteria of 10CFR50.46.

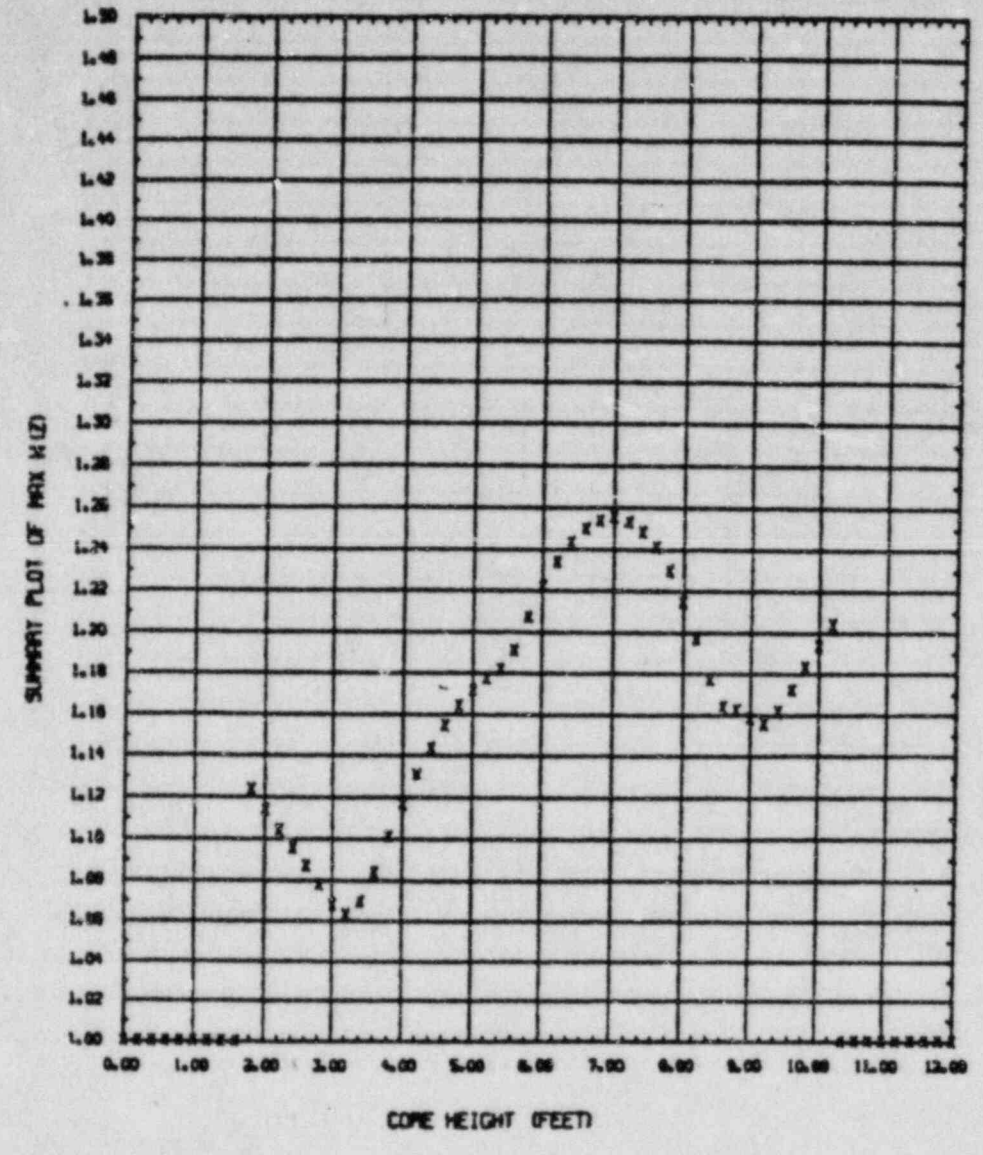
(1) WCAP-10216-P-A, Relaxation of Constant Axial Offset Control - F_Q Surveillance Technical Specification.



		HEIGHT (FEET)	MAX W(Z)
BOTTOM-->	*	0.00	1.000
	*	.20	1.000
	*	.40	1.000
	*	.60	1.000
	*	.80	1.000
	*	1.00	1.000
	*	1.20	1.000
	*	1.40	1.000
	*	1.60	1.000
		1.80	1.363
		2.00	1.336
		2.20	1.309
		2.40	1.281
		2.60	1.253
		2.80	1.225
		3.00	1.195
		3.20	1.174
		3.40	1.167
		3.60	1.165
		3.80	1.163
		4.00	1.159
		4.20	1.154
		4.40	1.148
		4.60	1.142
		4.80	1.134
		5.00	1.125
		5.20	1.115
		5.40	1.112
		5.60	1.114
		5.80	1.119
		6.00	1.125
		6.20	1.132
		6.40	1.136
		6.60	1.140
		6.80	1.142
		7.00	1.143
		7.20	1.142
		7.40	1.139
		7.60	1.135
		7.80	1.128
		8.00	1.119
		8.20	1.108
		8.40	1.093
		8.60	1.080
		8.80	1.076
		9.00	1.077
		9.20	1.081
		9.40	1.087
		9.60	1.090
		9.80	1.093
		10.00	1.100
		10.20	1.108
	*	10.40	1.000
	*	10.60	1.000
	*	10.80	1.000
	*	11.00	1.000
	*	11.20	1.000
	*	11.40	1.000
	*	11.60	1.000
	*	11.80	1.000
TOP-->	*	12.00	1.000

* Top and bottom 15% excluded as per Technical Specification 4.2.2.2.g

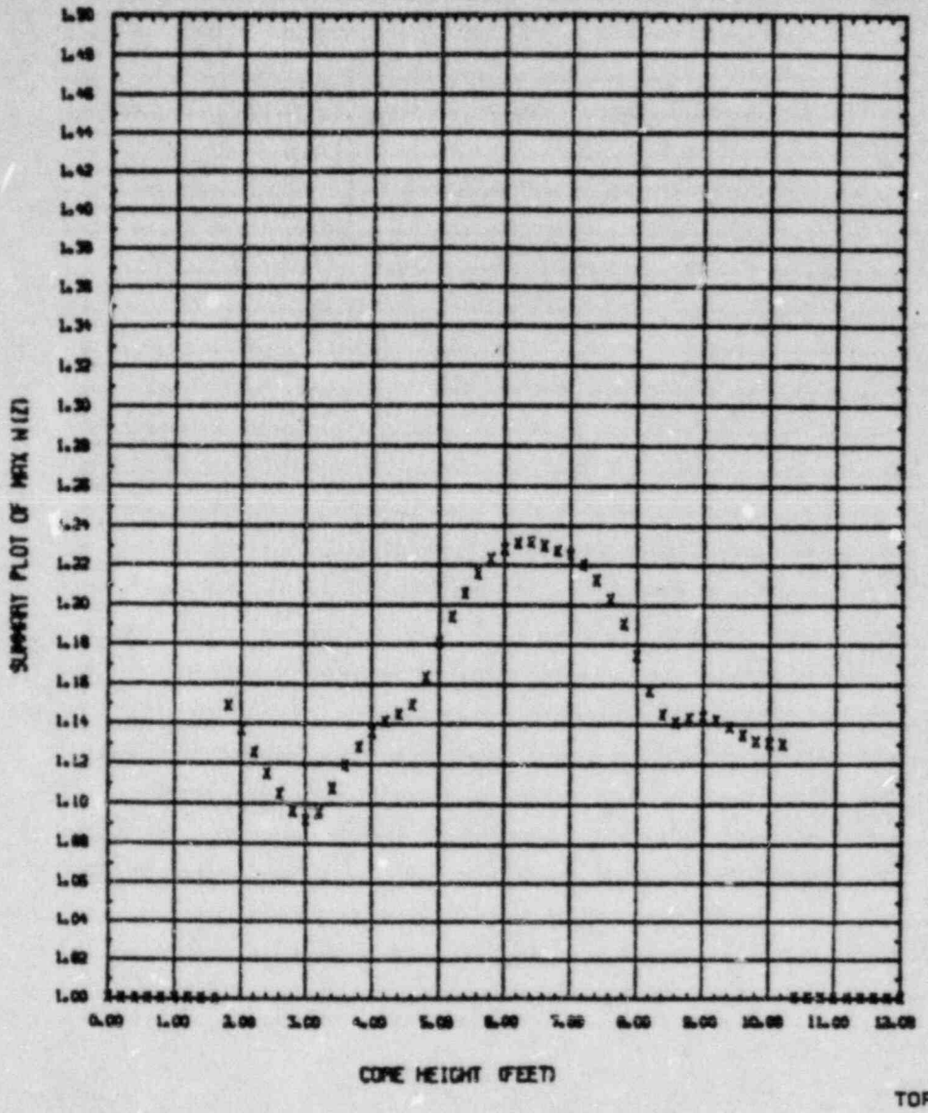
Figure 1 Sequoyah Unit 1 Cycle 3 RAOC W(z) at 150 MWD/MTU



		HEIGHT (FEET)	MAX W(Z)
BOTTOM-->	*	0.00	1.000
	*	.20	1.000
	*	.40	1.000
	*	.60	1.000
	*	.80	1.000
	*	1.00	1.000
	*	1.20	1.000
	*	1.40	1.000
	*	1.60	1.000
		1.80	1.124
		2.00	1.114
		2.20	1.104
		2.40	1.095
		2.60	1.087
		2.80	1.078
		3.00	1.068
		3.20	1.063
		3.40	1.069
		3.60	1.084
		3.80	1.101
		4.00	1.116
		4.20	1.130
		4.40	1.143
		4.60	1.154
		4.80	1.164
		5.00	1.171
		5.20	1.177
		5.40	1.182
		5.60	1.191
		5.80	1.207
		6.00	1.222
		6.20	1.234
		6.40	1.243
		6.60	1.250
		6.80	1.254
		7.00	1.255
		7.20	1.253
		7.40	1.249
		7.60	1.241
		7.80	1.230
		8.00	1.215
		8.20	1.197
		8.40	1.177
		8.60	1.164
		8.80	1.162
		9.00	1.158
		9.20	1.155
		9.40	1.161
		9.60	1.172
		9.80	1.183
		10.00	1.194
		10.20	1.204
	*	10.40	1.000
	*	10.60	1.000
	*	10.80	1.000
	*	11.00	1.000
	*	11.20	1.000
	*	11.40	1.000
	*	11.60	1.000
	*	11.80	1.000
TOP-->	*	12.00	1.000

* Top and bottom 15% excluded as per Technical Specification 4.2.2.2.g

Figure 2 Sequoyah Unit 1 Cycle 3 RADC W(z) at 8000 MWD/MTU



		HEIGHT (FEET)	MAX W(Z)
BOTTOM-->	*	0.00	1.000
	*	.20	1.000
	*	.40	1.000
	*	.60	1.000
	*	.80	1.000
	*	1.00	1.000
	*	1.20	1.000
	*	1.40	1.000
	*	1.60	1.000
		1.80	1.149
		2.00	1.137
		2.20	1.125
		2.40	1.115
		2.60	1.105
		2.80	1.096
		3.00	1.092
		3.20	1.095
		3.40	1.107
		3.60	1.119
		3.80	1.128
		4.00	1.135
		4.20	1.141
		4.40	1.144
		4.60	1.149
		4.80	1.163
		5.00	1.181
		5.20	1.194
		5.40	1.206
		5.60	1.216
		5.80	1.223
		6.00	1.228
		6.20	1.231
		6.40	1.232
		6.60	1.230
		6.80	1.227
		7.00	1.225
		7.20	1.220
		7.40	1.212
		7.60	1.203
		7.80	1.190
		8.00	1.174
		8.20	1.157
		8.40	1.145
		8.60	1.141
		8.80	1.143
		9.00	1.144
		9.20	1.142
		9.40	1.138
		9.60	1.134
		9.80	1.131
		10.00	1.130
		10.20	1.130
	*	10.40	1.000
	*	10.60	1.000
	*	10.80	1.000
	*	11.00	1.000
	*	11.20	1.000
	*	11.40	1.000
	*	11.60	1.000
	*	11.80	1.000
TOP-->	*	12.00	1.000

* Top and bottom 15% excluded as per Technical Specification 4.2.2.2.g

Figure 3 Sequoyah Unit 1 Cycle 3 RADC W(z) at 12000 MWD/MTU