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20 Turnpike Road Westborough, Massachusetts 01581

May 11, 1978

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United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation

- Reference:
- (a) License No. DPR-3 (Docket No. 50-29)
 - (b) Proposed Change No. 155, Supplement No. 1 dated December 14, 1977, WYR 77-127
 - (c) NRC letter to YAEC dated March 16, 1978
 - (d) YAEC letter to NRC dated April 6, 1978

Dear Sir:

Subject: Additional Information Package No. 2, Incore Detector System Technical Specification Changes

The additional information promised in Reference (d) is provided in Attachment I.

After discussion with your Staff, additional information to supplement Question 2 of Reference (c) will be submitted on or before June 15, 1978.

Any further questions regarding the enclosure should be directed to Mr. Richard J. Cacciapouti at our Engineering Office, 20 Turnpike Road, Westboro, Massachusetts, 01581, (617) 366-9011, Extension 2807.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

W. P. Johnson
W. P. Johnson
Vice President

COMMONWEALTH OF MASSACHUSETTS))ss.
COUNTY OF WORCESTER)

781390054

Then personally appeared before me, W. P. Johnson, who being duly sworn did state that he is Vice President of Yankee Atomic Electric Company, that he is duly authorized to execute and file the foregoing request in the name and on the behalf of Yankee Atomic Electric Company and that the statements therein are true to the best of his knowledge and belief.

8011170296

P

Robert H. Groce

Robert H. Groce Notary Public
My Commission Expires September 14, 1984

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5/31/80

Attachment I

Additional Information Concerning Reduction of Incore Neutron Detector Chambers at Yankee Rowe

A-1 In response to question 1 of Reference (c), it has always been Yankee's practice to verify core loading by means of visual inspection. This method is considered an absolute check of the actual loading pattern over and above the strict administrative and procedural controls in effect during fuel handling operations.

To substitute this method for an analytical technique would be extremely complex and would represent an undue hardship to Yankee. Even with the relatively small size of the Yankee Rowe core (76 assemblies), the number of possible loading arrangements is enormous. To then analyze the effects of each one of these possible misloadings becomes extremely costly and would require much development time and manpower.

In lieu of this analysis Yankee proposes the following inspection program. After the core has been loaded, the plant Reactor Engineering staff would do a visual inspection of the core and videotape this inspection. This videotape would then be reviewed and a core loading map would be reconstructed from the tape. This map would be compared to the design loading map to verify proper assembly location. Even in the remote case where a fuel misloading went undetected during fuel handling operations, Yankee believes that this final check will provide the safeguards to ensure that any error is detected and corrected.

A-2 To provide a meaningful statistical base for verifying that a minimum of twelve neutron detector thimbles would be capable of yielding a proper power distribution, two more state points were run for Core 13. The base cases were the Core 13 flux maps produced at 408 MWD/MTU and at 6530 MWD/MTU which used all 17 available thimbles. Using the INCORE program, a series of power distributions were also produced for a reduced compliment of 12 detectors. The case numbers and location of the 12 thimbles is consistent with the data presented at 2800 MWD/MTU (Reference d).

Tables 1 and 2 present the maximum LHGR for the six hottest rods in the INCORE analyses at 408 MWD/MTU and 6530 MWD/MTU, respectively, for both the base case (17 thimbles) and for the cases with the reduced number of thimbles (12 thimbles). As in the 2800 MWD/MTU case, this analysis shows that in most instances, the reduced number of thimbles produced a higher measured LHGR. Since in most cases the peak LHGR increased over the base case, it is again concluded that it would not be necessary to place an additional uncertainty on the measured peak LHGR for Yankee Rowe with a reduced compliment of thimbles.

The measured and calculated (PDQ) reaction rates were compared for the base case and the ten cases with a reduced number of thimbles. The comparisons for all cases at 408 MWD/MTU and for all cases at 6530 MWD/MTU are given in the attached core maps. The results show that on the average, the difference between measured and calculation reaction rates is relatively stable. Thus, it appears that a reduced compliment of thimbles does not have a marked effect on the INCORE synthesis procedure.

Core 13 and all "odd numbered" cores are loaded with 36 fresh assemblies. Due to the size and design of Yankee Rowe, Cores 15, 17, 19 etc. should be similar to Core 13. The analysis presented for Core 13 is applicable to all "odd numbered" cores. Consequently, it is concluded that a reduced compliment of incore detector thimbles on "odd numbered" cores should not require additional uncertainties on the LHGR.

All "even numbered" cores are loaded with fresh assemblies and should be similar to Core 12. To verify the supposition that no additional uncertainty be placed on the LHGR, a series of calculations will also be run on Core 12. This data will be submitted on or about June 15, 1978.

Table 1
 Yankee Rowe Core XIII 408 MWD/MTU
 Maximum Linear Heat Generation Rate Comparison Between 17 and 12 Available Thimbles

Case	Assembly Containing Pin With Maximum LHGR						% Difference Maximum LHGR
	C-8	B-7	D-9	C-3	B-4	H-8	
Base+	8.990*	8.891	8.890	8.737	8.643	8.618	-
Case 1	8.869*	8.732	8.774	8.757	8.663	8.637	-1.35
Case 2	8.861	8.908*	8.766	8.754	8.660	8.634	-0.91
Case 3	9.211*	8.952	9.112	8.742	8.648	8.622	2.46
Case 4	9.163*	8.999	9.054	8.788	8.693	8.668	1.92
Case 5	9.059	9.018	8.951	8.727	9.117*	8.664	1.41
Case 6	9.211*	8.952	9.112	8.742	8.648	8.600	2.46
Case 7	9.170*	8.913	9.071	8.742	8.649	8.623	2.00
Case 8	8.970	8.872	8.871	8.757	9.149*	8.638	1.77
Case 9	9.062*	8.900	8.954	8.691	8.597	8.764	.80
Case 10	9.022*	8.923	8.922	8.768	8.674	8.705	.36
RMS Error	1.45	1.03	1.58	0.30	2.55	0.69	1.68

*Maximum value +Base contains 17 thimbles all other cases contain 12 thimbles

Table 2
 Yankee Rowe Core XIII 6530 MWD/MTU
 Maximum Linear Heat Generation Rate Comparison Between 17 and 12 Available Thimbles

Case	Assembly Containing Pin With Maximum LHGR						% Difference Maximum LHGR
	C-8	J-4	C-3	H-3	H-8	D-9	
Base*	9.418*	9.407	9.406	9.379	9.373	9.362	-
Case 1	9.346	9.391*	9.390	9.363	9.357	9.292	-.29
Case 2	9.348	9.400*	9.398	9.371	9.365	9.292	-.19
Case 3	9.490*	9.394	9.392	9.365	9.359	9.434	.76
Case 4	9.573*	9.501	9.499	9.472	9.466	9.514	1.65
Case 5	9.437	9.439	9.606*	9.286	9.332	9.378	2.00
Case 6	9.525*	9.428	9.426	9.399	9.397	9.468	1.14
Case 7	9.467	9.376	9.612*	9.352	9.346	9.411	2.06
Case 8	9.415	9.477	9.645*	9.324	9.379	9.358	2.41
Case 9	9.441	9.286	9.368	9.341	9.690*	9.383	2.89
Case 10	9.492*	9.346	9.479	9.452	9.437	9.435	.79
RMS Error	0.82	0.60	1.33	0.57	1.15	0.81	1.67

*Maximum value +Base contains 17 thimbles all other cases contain 12 thimbles | |

BASE CASE

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MWT. GROUP C AT 85.0 INCHES

408. MWD/MTU

MEASURED SIGNAL			.699			
THEORETICAL SIGNAL			.724			
PERCENT DIFFERENCE			-3.395			
				1.004		
				1.044		
				-3.822		
					1.086	
					1.116	
					-2.687	
		1.114	1.089			
		1.116	1.072			
		-.176	1.580			
.746			1.098			1.039
.727			1.076			1.057
2.607			2.037			-1.689
					1.094	
					1.076	
					1.669	
	1.099			1.098		1.098
	1.087			1.072		1.116
	1.032			2.439		-1.589
		1.124			1.100	
		1.116			1.111	
		.704			-1.026	
	.738		1.046			
	.725		1.044			
	1.795		.240			
				.731		
				.724		
				.954		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.732 PERCENT

POOR ORIGINAL

CASE 1

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MWT. GROUP C AT 85.0 INCHES

408. MWD/MTU

MEASURED SIGNAL	THEORETICAL SIGNAL	PERCENT DIFFERENCE				
					.927	
					.962	
					-3.633	
						1.003
						1.029
						-2.496
	1.029		1.006			
	1.029		.988			
	.020		1.780			
		1.014				.960
		.992				.975
		2.238				-1.496
					1.011	
					.992	
					1.869	
				1.014		1.015
				.988		1.029
				2.640		-1.396
		1.038			1.016	
		1.029			1.025	
		.901			-.831	
			.966			
			.962			
			.437			

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.645 PERCENT

CASE 2

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUM YR-13-004

496.0 FEET. GROUP C AT 85.0 INCHES

408. MUD/MTU

MEASURED SIGNAL	THEORETICAL SIGNAL	PERCENT DIFFERENCE				
					.924	
					.959	
					-3.698	
					.999	
					1.026	
					-2.561	
	1.025		1.002			
	1.026		.985			
	-.047		1.711			
		1.010			.956	
		.989			.972	
		2.169			-1.562	
					1.007	
					.989	
					1.800	
1.010				1.010		1.011
.999				.985		1.026
1.162				2.571		-1.462
		1.034			1.012	
		1.026			1.021	
		.833			-.998	

AVERAGED ABSOLUTE DIFFERENCE
BETWEEN MEASURED AND THEORETICAL

1.706 PERCENT

POOR ORIGINAL

CASE 3

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MW. GROUP C AT 85.0 INCHES

408. MW/MTU

MEASURED SIGNAL				
THEORETICAL SIGNAL				
PERCENT DIFFERENCE				
			.952	
			.989	
			-3.734	
				1.030
				1.057
				-2.597
	1.056		1.032	
	1.057		1.015	
	-.084		1.673	
		1.041		
		1.019		.986
		2.131		1.002
				-1.598
				1.037
				1.019
				1.762
1.041			1.041	1.041
1.029			1.015	1.057
1.125			2.533	-1.498
				1.043
				1.053
				-.935
	.700			
	.687			
	1.889			

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.797 PERCENT

POOR ORIGINAL

CASE 4

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MWT. GROUP C AT 85.0 INCHES

408. MWD/MTU

MEASURED SIGNAL			.730		
THEORETICAL SIGNAL			.749		
PERCENT DIFFERENCE			-2.632		
				1.047	
				1.081	
				-3.063	
					1.133
					1.155
					-1.918
		1.163			
		1.155			
		.613			
.778					1.085
.757					1.095
3.417					-.913
	1.146				1.146
	1.125				1.155
	1.830				-.812
					1.148
					1.151
					-.244
	.770		1.092		
	.751		1.081		
	2.599		1.032		
				.762	
				.749	
				1.751	

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.735 PERCENT

CASE 5

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MWT. GROUP C AT 85.0 INCHES

408. MWD/MTU

MEASURED SIGNAL			.732				
THEORETICAL SIGNAL			.758				
PERCENT DIFFERENCE			-3.428				
					1.052		
					1.094		
					-3.854		
				1.135			
				1.123			
				1.088			
.778			1.148				1.084
.762			1.128				1.108
2.111			1.773				-2.165
						1.146	
						1.128	
						1.635	
					1.150		
					1.123		
					2.404		
						1.152	
						1.165	
						-1.059	
		.770	1.091				
		.760	1.094				
		1.303	-.245				
					.762		
					.758		
					.465		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.794 PERCENT

CASE 6

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MUT. GROUP C AT 85.0 INCHES

408. MWD/MTU

MEASURED SIGNAL			.727		
THEORETICAL SIGNAL			.750		
PERCENT DIFFERENCE			-3.035		
				1.044	
				1.081	
				-3.463	
					1.129
					1.156
					-2.324
		1.158	1.132		
		1.156	1.110		
		.197	1.959		
.775			1.142		1.081
.753			1.115		1.095
2.990			2.418		-1.322
	1.142				1.142
	1.126				1.156
	1.409				-1.222
		.768			
		.751			
		2.175			
			.760		
			.750		
			1.331		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.987 PERCENT

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MWT. GROUP C AT 85.0 INCHES

408. MWD/MTU

MEASURED SIGNAL		.707		
THEORETICAL SIGNAL		.729		
PERCENT DIFFERENCE		-2.882		
			1.015	
			1.050	
			-3.311	
				1.098
				1.123
				-2.170
		1.108		1.047
		1.082		1.064
		2.348		-1.612
				1.106
				1.082
				2.209
1.105			1.110	1.111
1.093			1.078	1.123
1.111			2.983	-1.066
				1.113
				1.118
				-0.500
	.743			
	.730			
	1.875			
			.736	
			.728	
			1.033	

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.925 PERCENT

CASE 8

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 HWT. GROUP C AT 85.0 INCHES

408. MID/MTU

MEASURED SIGNAL	THEORETICAL SIGNAL	PERCENT DIFFERENCE
		1.013
		1.053
		-3.739
.749	1.106	1.045
.733	1.085	1.066
2.233	1.895	-2.048
1.103		1.108
1.096		1.081
.663		2.527
		1.109
		1.126
		-1.504
	1.129	1.110
	1.126	1.121
	.336	-.940
.742	1.051	
.731	1.053	
1.424	-.126	
		.734
		.730
		.586

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.502 PERCENT

CASE 9

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 MWT. GROUP C AT 85.0 INCHES

408. MWD/%TH

MEASURED SIGNAL			.727		
THEORETICAL SIGNAL			.754		
PERCENT DIFFERENCE			-3.572		
				1.043	
				1.087	
				-3.998	
					1.129
					1.162
					-2.865
		1.158		1.131	
		1.162		1.116	
		-.359		1.394	
.775			1.141		
.757			1.120		
2.419			1.850		
	1.141			1.141	
	1.132			1.116	
	.846			2.251	
	.767		1.087		
	.755		1.087		
	1.609		.056		
				.759	
				.754	
				.769	

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.832 PERCENT

CASE 10

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-004

496.0 FEET. GROUP C AT 85.0 INCHES

408. MWD/MTD

MEASURED			.724			
THEORETICAL			.748			
PERCENT DIFF			-3.183			
				1.040		
				1.079		
				-3.611		
					1.125	
					1.154	
					-2.473	
		1.154				
		1.154				
		.044				
.773			1.137			
.751			1.112			
2.833			2.261			
	1.137					
	1.123					
	1.254					
			1.164		1.140	
			1.154		1.149	
			.925		-.808	
		.765	1.084			
		.750	1.070			
		2.019	.460			
				.757		
				.748		
				1.176		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.754 PERCENT

BASE CASE

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MWT. GROUP C AT 85.0 INCHES

6530. MWB/MTU

MEASURED SIGNAL			.718				
THEORETICAL SIGNAL			.744				
PERCENT DIFFERENCE			-3.473				
					1.022		
					1.054		
					-2.975		
						1.100	
						1.108	
						-0.687	
		1.104		1.105			
		1.108		1.068			
		-0.364		3.468			
.739			1.103				1.076
.746			1.070				1.069
-0.932			3.081				.703
						1.112	
						1.070	
						3.934	
	1.026				1.111		1.101
	1.052				1.068		1.108
	-2.479				4.046		-0.623
			1.101			1.093	
			1.108			1.105	
			-0.635			-1.110	
	.715			1.036			
	.724			1.054			
	-1.220			-1.704			
					.736		
					.744		
					-1.066		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.912 PERCENT

CASE 1

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MWT. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL
THEORETICAL SIGNAL
PERCENT DIFFERENCE

				.939 .973 -3.537			
					1.011 1.024 -1.262		
	1.014 1.024 -.941		1.015 .987 2.869				
		1.013 .989 2.484				.988 .987 .120	
					1.022 .989 3.332		
				1.020 .987 3.443		1.011 1.024 -1.198	
		1.011 1.024 -1.211			1.004 1.011 -1.683		
			.951 .973 -2.273				

AVERAGED ABSOLUTE DIFFERENCE
BETWEEN MEASURED AND THEORETICAL 2.029 PERCENT

CASE 2

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MWT. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL	THEORETICAL SIGNAL	PERCENT DIFFERENCE						
					.940			
					.973			
					-3.477			
						1.011		
						1.024		
						-1.200		
		1.015		1.016				
		1.024		.987				
		-.880		2.933				
			1.014				.989	
			.989				.987	
			2.548				.182	
						1.022		
						.989		
						3.396		
	.943				1.021		1.012	
	.972				.987		1.024	
	-2.984				3.507		-1.137	
		1.012				1.005		
		1.024				1.021		
		-1.149				-1.622		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 2.085 PERCENT

CASE 3

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MWT. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL
THEORETICAL SIGNAL
PERCENT DIFFERENCE

				.966 1.003 -3.478			
						1.042 1.055 -1.202	
		1.046 1.055 -.881		1.047 1.017 2.931			
			1.045 1.019 2.546			1.019 1.017 .181	
						1.053 1.019 3.395	
	.972 1.002 -2.985			1.052 1.017 3.506		1.043 1.055 -1.138	
						1.035 1.052 -1.623	
		.677 .689 -1.733					

AVERAGED ABSOLUTE DIFFERENCE
BETWEEN MEASURED AND THEORETICAL 2.133 PERCENT

CASE 4

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MWT. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL		.752		
THEORETICAL SIGNAL		.769		
PERCENT DIFFERENCE		-2.225		
			1.070	
			1.088	
			-1.721	
				1.152
				1.145
				.597
	1.155			
	1.145			
	.924			
.774				1.126
.771				1.104
.349				2.005
	1.074			1.152
	1.087			1.145
	-1.219			.662
				1.144
				1.142
				.168
	.748	1.084		
	.748	1.088		
	.057	-.433		
			.770	
			.769	
			.213	

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL .881 PERCENT

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 FEET. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL			.746				
THEORETICAL SIGNAL			.775				
PERCENT DIFFERENCE			-3.854				
				1.061			
				1.098			
				-3.358			
				1.146			
				1.113			
				2.955			
.766			1.144				1.116
.778			1.115				1.114
-1.423			2.622				.204
						1.154	
						1.115	
						3.524	
						1.153	
						1.113	
						3.635	
						1.135	
						1.152	
						-1.500	
		.742	1.074				
		.754	1.098				
		-1.710	-2.191				
						.763	
						.775	
						-1.557	

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 2.378 PERCENT

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MUT. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL			.747			
THEORETICAL SIGNAL			.770			
PERCENT DIFFERENCE			-3.072			
					1.062	
					1.090	
					-2.571	
						1.144
						1.147
						-.274
		1.147		1.148		
		1.147		1.105		
		.050		3.898		
.768			1.146			1.118
.772			1.108			1.106
-.520			3.510			1.122
	1.066					1.144
	1.089					1.147
	-2.074					-.209
		.743				
		.749				
		-.810				
				.765		
				.770		
				-.655		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.564 PERCENT

POOR ORIGINAL

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MWT. GROUP 2 AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL			.724				
THEORETICAL SIGNAL			.749				
PERCENT DIFFERENCE			-3.431				
				1.030			
				1.061			
				-2.932			
					1.109		
					1.116		
					-.643		
			1.111				1.083
			1.078				1.076
			3.074				.645
					1.121		
					1.078		
					3.979		
	1.033				1.119		1.109
	1.059				1.075		1.116
	-2.536				4.091		-.579
					1.101		
					1.113		
					-1.067		
	.720						
	.729						
	-1.277						
					.741		
					.749		
					-1.123		

AVERAGED ABSOLUTE DIFFERENCE BETWEEN MEASURED AND THEORETICAL. 2.115 PERCENT

POOR ORIGINAL

CASE 8

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MW. GROUP C AT 85.0 INCHES

6530. MWD/MTU

MEASURED SIGNAL	THEORETICAL SIGNAL	PERCENT DIFFERENCE					
					1.035		
					1.062		
					-2.576		
.748		1.116				1.088	
.752		1.079				1.077	
-.626		3.452				1.014	
1.038				1.125		1.115	
1.061				1.077		1.117	
-2.178				4.473		-.214	
		1.114			1.107		
		1.117			1.115		
		-.328			-.704		
	.723		1.047				
	.730		1.062				
	-.915		-1.400				
				.745			
				.750			
				-.760			

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.553 PERCENT

CASE 9

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MW. GROUP C AT 85.0 INCHES

6530. MW/MTU

MEASURED SIGNAL			.749			
THEORETICAL SIGNAL			.774			
PERCENT DIFFERENCE			-3.277			
				1.065		
				1.096		
				-2.778		
					1.147	
					1.152	
					-.485	
		1.150		1.151		
		1.152		1.110		
		-.162		3.678		
.770			1.149			
.776			1.113			
-.731			3.291			
	1.069			1.158		
	1.094			1.110		
	-2.281			4.257		
		.745		1.079		
		.753		1.096		
		-1.020		-1.504		
				.767		
				.774		
				-.865		

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 2.027 PERCENT

CASE 10

COMPARISON OF MEASURED AND THEORETICAL SIGNALS

INCORE RUN YR-13-011

600.0 MUT. GROUP C AT 85.0 INCHES

6530. MWD/MTH

MEASURED SIGNAL			.750				
THEORETICAL SIGNAL			.769				
PERCENT DIFFERENCE			-2.441				
					1.067		
					1.088		
					-1.937		
						1.149	
						1.145	
						.376	
		1.153					
		1.145					
		.701					
.772			1.152				
.771			1.195				
.128			4.184				
1.071							
1.087							
-1.436							
			1.149			1.141	
			1.145			1.142	
			.427			-.052	
		.747		1.081			
		.748		1.088			
		-.164		-.653			
						.769	
						.769	
						-.008	

AVERAGED ABSOLUTE DIFFERENCE
 BETWEEN MEASURED AND THEORETICAL 1.042 PERCENT

A 5/22/78

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
DISTRIBUTION FOR INCOMING MATERIAL 50-029

REC: NRC ORG: JOHNSON W P YANKEE ATOMIC ELEC DOCDATE: 05/11/78 DATE RCVD: 05/19/78

DOCTYPE: LETTER NOTARIZED: YES COPIES RECEIVED LTR 3 ENCL 40
SUBJECT: FORWARDING ADDL INFO AS PROMISED IN APPLICANT'S LTR DTD 04/06/78 CONCERNING REDUCTION OF INCORE NEUTRON DETECTOR CHAMBERS AT SUBJECT FACILITY... W/ATT CHARTS AND SUPPORTING INFO... NOTARIZED 05/11/78.

PLANT NAME: YANKEE ROWE REVIEWER INITIAL: XJM DISTRIBUTOR INITIAL: M

***** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS *****

GENERAL DISTRIBUTION FOR AFTER ISSUANCE OF OPERATING LICENSE.
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HANAUER**W/ENCL CHECK**W/ENCL
EISENHUT**W/ENCL SHAO**W/ENCL
BAER**W/ENCL BUTLER**W/ENCL
EEB**W/ENCL J COLLINS**W/ENCL
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EXTERNAL: LPDR'S
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SIZE: 1P-26P

***** THE END *****

POOR ORIGINAL